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Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

Stories of the Week
Small Beer, Anyone?
New Game for Readers
Reading Us Carefully
Scintillating Gems

Stories of the Week

British army officer who had served long in "Indya" submitted to a physical checkup. Was informed he had hydropsy.

"What's that?"

"Too much water in your body," the doctor elucidated.

"Impossible!" roared the colonel. "I never drink water. Er," he second-thoughted, "maybe it was that blarsted ice."

"I'll say this about Harry," reflected a PTA association member. "If there's nothing to be said, he is the fellow who will say it."

Definition of a Husband: Man who buys season tickets in March to autumn football games and purchases his wife's Christmas present December 24.

Small Beer, Anyone?

When the Russians launched their first satellite ("Shine On, Harvest Sputnik") the *U. S. News* headlined its lead article:

IS THE WHOLE WORLD IN TROUBLE?

Parisien newspaper, *France-Soir,* simultaneously headlined:

Gripe, Gripe, Gripe

Crisis, Crisis, Crisis

Beep, Beep, Beep

No doubt that's "situation normal" in the air conditioning and refrigeration industry.

New Game for Readers

Dozens of subscribers are sharing the fun of sending "Dope" unconsciously or accidentally funny clippings from newspapers. Among the best of recent contributions are these:

The union is seeking a 10% wage increase plus improved benefits and double time for any day in which the workers work. —*Philadelphia Bulletin.*

She said she met him in 1915 but this was the first time they had to get married—*St. Joseph (Mo.) News-Press.*

The newspaper was awarded first place for it sexcellence of display advertising. — *Newport News Times Herald.*

A Pulse survey shows that persons who drive their autos to work don't read newspapers, while those who go to work in the subway don't listen to the

(Concluded on Page 8, Col. 1)

Detroit's '57 Cooling Jobs Total 1,701

Tops Every Year but '56 In First 11 Mos.

DETROIT — Air conditioning installations in the first 11 months of 1957 far submerged those of any previous year—other than the exceptional 1956—with a total of 1,701 packaged units and condensing units for remote systems being recorded.

The total of 1,701 air conditioning units put into Detroit establishments last year was second only to the 2,449 of 1956. It was quite a leap over the 1,499 of 1955, best previous year.

Breakdown of installations according to contractor shows that 114 different contractors installed air conditioning in this city in 1957. This compares with the 106 in 1956 and 89 the preceding year. This may indicate a trend that more persons are

(Concluded on Page 4, Col. 1)

Solar Energy Talk To Lead ASHAE Meeting

NEW YORK CITY—A topical session on solar energy will launch the 64th annual convention of the American Society of Heating & Air-Conditioning Engineers to be staged in the Penn-Sheraton hotel in Pittsburg, Jan. 27-29.

During their three-day convention, the engineers will hear 17 papers and two symposiums, attend a variety of technical advisory committee meetings, and inspect a number of outstanding installations in the area. Double sessions will be held on the second and third days.

The symposiums will cover high temperature water and school heating, ventilating, and air conditioning.

At the annual banquet on Jan. 29, George L. Tuve, professor of mechanical engineering and director of Bingham Laboratories, Case Institute of Technology in Cleveland, will receive the F. Paul Anderson medal, highest award of the society.

The honor of "Fellow" of the

(Concluded on Page 23, Col. 3)

NAHB Show

Air Conditioner Mfrs. To Display

CHICAGO — More than 70 manufacturers of air conditioning, heating, and ventilating equipment and appliances will display their wares at the 14th annual exposition of the National Association of Home Builders here Jan. 19 to 23.

(Concluded on Page 4, Col. 4)

Eyes of World's Refrigeration Industry To Focus on Australia

Taubeneck Will Speak at May Conclave—

SYDNEY, N. S. W.—Eyes of the world-wide refrigeration industry will focus on the Australian Institute of Refrigeration's 1958 Conference and Convention in May.

Imported guest speakers Dr. Rudolf Plank, founder of the German Institute of Refrigeration and the World Congress of Refrigeration, and George F. Taubeneck, editor and publisher of AIR CONDITIONING & REFRIGERATION NEWS, will spearhead an international delegation to this affair.

AIR's first Refrigeration and Air Conditioning Exhibition—held in conjunction with the convention—also will be staged at the R.A.S. Show grounds in Sydney, May 6-9. The annual conference begins two days earlier.

From all around the South Pacific and the Far East, executives, purchasing officers, engineers, and contractor-dealers who are interested in refrigeration, air conditioning, cold stor-

(Concluded on Page 27, Col. 1)

Carrier's '57 Net Sales Pass '56

SYRACUSE, N. Y.—Carrier Corp. released the following figures for its fiscal year ended Oct. 31, 1957:

Orders booked, $264,138,000; net sales, $263,426,000; net profit, $7,268,000 or $3.17 per share of common stock. A backlog of unfilled orders in the amount of $105,994,000 was also reported.

In the preceding period, orders booked amounted to $268,275,000 while net sales

(Concluded on Back Page, Col. 1)

BEHIND PAGE ONE . . .

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Whirlpool Buys Servel Gas Refrigerator Mfg. Facilities

* * *

Whirlpool Features Built-In Meat Chest In '58 Refrigerator

CHICAGO — Built-in meat chest claimed to increase storage life of fresh meat by holding an approximate 33° temperature and a new method refrigeration which blows cold dry air into food storage areas are chief features of the 1958 "RCA Whirlpool" line of refrigerators and freezers recently introduced by Whirlpool Corp.

"Mark" series highlights four "highly-styled units": a two-door Mark VII model combining an 11-cu. ft. refrigerator with a 6-cu. ft. freezer; Mark VI 6-cu. ft. undercounter freezer; and two 11-cu. ft. units, Mark XI refrigerator and matching freezer.

In addition, Whirlpool offers

(Concluded on Page 27, Col. 2)

ST. JOSEPH, Mich.—Whirlpool Corp. has purchased from Servel, Inc., for approximately $6.5 million in cash, all facilities, including patents, property, and equipment relating to the Servel gas refrigerator and ice maker, Elisha Gray II, Whirlpool president, announced recently.

The purchase, he indicated puts Whirlpool in a position to market a domestic gas refrigerator under the "RCA Whirlpool" brand this spring.

Whirlpool is already manufacturing gas-operated combination washer-dryers, dryers, and ranges. A gas water heater and a gas incinerator are in various stages of engineering research and development.

Duncan Menzies, president of Servel, added that as part of the deal, Servel paid Whirlpool $1.6 million to assume its contractual obligation to fulfill unexpired warranties on Servel

(Concluded on Back Page, Col. 2)

Westinghouse '58 Room Units HaveAirSweep

Portable Travels on Its Own Mobile Cart

CHICAGO—Directed cool air "that sweeps from wall to wall 12 times a minute" is one of the highlights of the 1958 Westinghouse room air conditioner line, the company announced.

Other top features include a reverse cycle, thermostatically controlled heat pump that operates even when the outside temperature is below freezing and a portable conditioner that has its own mobile cart for moving from room to room, according to the announcement.

Westinghouse is showing the new line publicly for the first time at the annual winter home furnishings market here in the Merchandise Mart.

Also being introduced is the company's new line of 1958 electric dehumidifiers. In this line, a new quick-action humidistat is featured on the "Custom" models.

G. W. Paulson, manager of the

(Concluded on Page 21, Col. 1)

Refrigeration

2 Unions Dispute Over Placing Cases

MINNEAPOLIS — Caught up in a two-way legal row rising out of a long standing jurisdictional dispute between the carpenters and the refrigeration mechanics over who would unload and set refrigerated cases in place in food markets is Allied Store Equipment Co. here.

On Jan. 17, the U. S. District Court here is scheduled to hear a plea by the Twin Cities Carpenters District Council for an injunction to prevent Allied from denying the carpenters the right to perform this work.

Named along with Allied in the suit are R. R. McChesney & Sons, a supermarket contracting firm, and Steamfitters Local 539 of United Association of Journeymen and Apprentices

(Concluded on Back Page, Col. 4)

FHA Revokes ME-13 Filter Requirement

WASHINGTON, D. C. — The filter requirement in the Federal Housing Administration's Mechanical Engineering Bulletin ME-13 governing residential air conditioning is being temporarily removed, an FHA official announced recently.

Stanley Seago, mechanical engineer in FHA's architectural standards division, said this is one of several minor revisions incorporated in a new bulletin

(Concluded on Page 4, Col. 5)

Compressors for Auto Air Conditioning Continue To Increase Over-All Share of Total Output

WASHINGTON, D. C.—Compressor body shipments by U.S. manufacturers during the first three quarters of 1957 were about 14% below similar figures for the same period of 1956, it is reported by Geo. S. Jones, Jr., managing director of Air-Conditioning & Refrigeration Institute.

Although the over-all total of compressor body shipments continued to drop below 1956 figures—a trend which began at mid-year—shipments of 2 and 1-hp. bodies, and those designed for use in automotive air conditioning, continued to increase their over-all share of the total output and to show gains over 1956 shipments, it was pointed out.

The figures are based on reports to ARI by companies whose output of compressor bodies is estimated to represent more than 95% of U.S. production. They do not include shipments of bodies produced for use in household refrigerators.

Total shipments of compressor bodies for the first three quarters of 1957 amounted to 3,334,171 units, compared with a total of 3,860,273 in the first nine months of 1956. September shipments of all categories in 1957 were 187,000 bodies, against a September total in the previous year of 347,110.

However, nine-months' shipments of 2-hp. bodies in 1957 were reported as 188,339 units, a gain of almost 200% over the 63,562 units shipped in the first three quarters of 1956. Similarly, shipments of automotive-type compressors jumped from a three-quarters total of 218,489 in 1956 to 391,960 in the same period of 1957, and 1-hp. compressor bodies increased from 692,016 units to 789,984 units in the corresponding periods.

"In this connection, it is interesting to note that shipments of automotive-type compressor bodies in the year and three quarters that they have been reported separately by ARI have totaled 675,982 units, and that 391,960, or almost 60% of this 21-month total, were shipped in the first three quarters of 1957," the report said.

"Another interesting comparison, perhaps indicative of a trend, is the fact that 89.8% of non-automotive compressor bodies sold in the first three quarters of 1957 were sold as 'compressor bodies, compressors, or condensing units,' compared with 87.1% sold in these classifications in the same period of 1956.

"At the same time, the bodies sold in unitary end use products (such as room or self-contained air conditioners, display cases, food freezers, or commercial refrigerators) declined from 12.9% to 10.2% in comparing the corresponding periods."

ARI also revealed that 84.4% of the non-automotive bodies sold in the first three quarters of 1957 were sold to other manufacturers, whereas 82.6% of sales in the first nine months of 1956 were to other manufacturers.

"All other sales" (including sales to non-manufacturers, distributors, jobbers, dealers, and retail customers) accounted for 17.4% of sales by compressor body manufacturers in the first three quarters of 1956 and 15.6% in the corresponding period of 1957.

Figures on manufacturers' shipments, broken down by categories, together with names of reporting companies, follow:

MANUFACTURERS' SHIPMENTS OF COMPRESSOR BODIES PRODUCED BY REPORTING COMPANIES

(Except for household refrigerators)

Horsepower*	Shipments Including Exports Sept., 1957	Jan.-Sept., 1957
⅛ & under	20,325	337,514
¼	58,305	592,947
⅓	25,322	193,201
½	9,276	83,141
¾	9,008	350,201
1	21,104	789,984
1½	3,201	201,955
2	3,791	188,339
3	4,697	84,047
5	2,792	†61,854
7½	1,856	37,447
10	360	8,627
15	233	2,856
20	146	1,799
25	141	1,498
30 & over	562	5,633
Total	**161,119**	**†2,941,043**
For Ammonia Refrigerant Total	125	1,168
For Automotive Air Conditioning—Total	25,756	391,960
Grand Total	**187,000**	**3,334,171**

*For all refrigerants **except** ammonia (excluding units for automotive air conditioning.)

†Includes revised data reported to ARI.

This summary includes all compressor bodies shipped by the reporting companies **regardless** of whether they were shipped separately or incorporated into a condensing unit or unitary end-use product (such as a room air conditioner, display case, freezer, or commercial refrigerator). Shipments for export are included. Shipments for household refrigerators are **not** included.

In order to avoid duplication of reporting, shipment figures were requested only from companies that assembled the machined compressor casting with the components necessary to make a complete compressor or motor-compressor assembly.

Reporting companies: Airtemp Div., Chrysler Corp.; Bendix-Westinghouse Automotive Airbrake Co.; Brunner Div., The, Dunham-Bush, Inc.; Carrier Corp.; Copeland Refrigeration Corp.; Curtis Mfg. Co., Refrigeration Div.; Frick Co., Inc.; Frigidaire Div., General Motors Corp.; General Electric Co.; Kelvinator Div., American Motors Corp.; Lehigh, Inc.; Tecumseh Products Co.; Trane Co., The; Vilter Mfg. Co.; Westinghouse Electric Corp.; Worthington Corp.; York Div., Borg-Warner Corp.

Clock Portion of Defroster Is Taxable

WASHINGTON, D. C.—A clock usable as a timepiece as well as to defrost a refrigerator at pre-designated times has been declared subject to retail excise tax.

The Internal Revenue Service ruled the clock portion of an automatic refrigerator defrosting control is taxable.

WEDGE UNIT
4 models
1,000 to 6,000
BTU'S Per Hour
CUB CURVETTE
3 models
800 to 4,000
BTU'S Per Hour
COOLMASTER
14 models
2,500 to 160,000
BTU'S Per Hour
AIR CONDITIONING UNIT
3 to 10 Ton
UNICON for Unlimited Tonnage; any size compressor can use this remote air-cooled condenser. Minimum head pressure maintained by patented Winterstat.
COIL AND BAFFLES
15 Stock Sizes
THERMOBANK automatic re-evaporator hot gas defrost systems. There is a THERMOBANK for every application from 36° to minus 75°.
LARGE CURVETTE
7 models
3,500 to 30,000
BTU'S Per Hour
KRAMER
PRODUCTS
Have earned an unsurpassed reputation for leadership and dependability that makes it easy for wholesalers and contractors to grow and prosper.
Designed and engineered to the highest standards, users of KRAMER products stay sold. Pictured are a few of the many KRAMER products—each a standard of the industry.
KRAMER TRENTON CO. • Trenton 5, N.J.
44 YEARS OF CONTINUOUS ACHIEVEMENT IN HEAT TRANSFER

For more information about products advertised on this page use Information Center, page 18.

'How To' Hydronics Calculation, Design, Installation Courses Scheduled During 1958 by I-B-R

NEW YORK CITY—A completely new "How To" course in designing and installing hydronic systems will be given throughout the country in 1958 in 15 I-B-R heating and cooling schools and six short courses, according to Robert E. Ferry, general manager of the Institute of Boiler & Radiator Mfrs.

The revised three-day course of study teaches labor and material saving methods that have been tested and proved to provide more business and bigger profits for contractors and wholesalers, it was stated.

"The program has been revamped to meet the needs of every man engaged in hydronic heating and cooling work," Ferry said.

"Everything about the I-B-R schools is new," Ferry noted. "As indicated by the school's new name, a significant part of the course is devoted to cooling with 'how to' instruction in the calculation, design, and—for the first time—installation of compatible cooling equipment."

The I-B-R Guides used as text books in the schools are new publications.

As in the past, design and calculation problems will be discussed and worked out in the classroom. Under the direction of Arthur Wales, I-B-R field training director, students will design systems for one pipe forced hot water heating, series loop baseboard, combination heating and cooling, and independent chilled water cooling.

Students will also analyze modern piping practices using the new Guide 700, and will receive practical instruction in the use of other I-B-R Guides. Two of these Guides will be used for classroom practice in I-B-R's advanced, accurate method for calculating residential heat losses and cooling loads, it was pointed out.

To help organize and conduct the schools in 1958, local committees have been established in each city in which a school will be held. Committee members and chairmen, who are sales representatives of I-B-R members and associate members, have been selected from the field in each local area.

All materials and texts used in the three-day hydronic course are included in the tuition of $36. Further information may be obtained by writing to the Institute of Boiler & Radiator Mfrs., 608 Fifth Ave., New York 20, N. Y.

Schedule of three-day I-B-R schools is as follows:

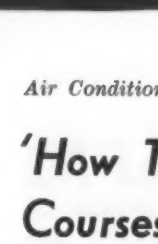
Philadelphia, Feb. 4-6; Newark, N. J., Feb. 11-13; Greensboro, N. C., Feb. 18-20; Atlanta, Feb. 25-27; Dayton, March 11-13; St. Louis, March 18-20; Chicago, March 25-27; Detroit, April 8-10; Cleveland, April 15-17; Pittsburgh, April 22-24; Buffalo, April 29-May 1; Boston, May 13-15; Hartford, Conn., May 20-22; Mineola, L. I., May 26-28; Albany, N. Y., June 10-12.

Also announced were these four-day short courses:

University of Illinois, Jan. 20-23; Iowa State college, March 3-6; Pennsylvania State university, April 7-10; University of New Hampshire, Aug. 11-14; North Carolina State college, (September or October, dates not definite); Michigan State university, Dec. 15-18.

Geyer Names Dan Packard Vice President

DETROIT — Daniel A. Packard, veteran authority on appliance distribution, has been named vice president and marketing director in the Detroit office of Geyer Advertising, Inc. Packard will join the Geyer agency on Feb. 3, after disposing of personal business interests in New England.



D. A. Packard

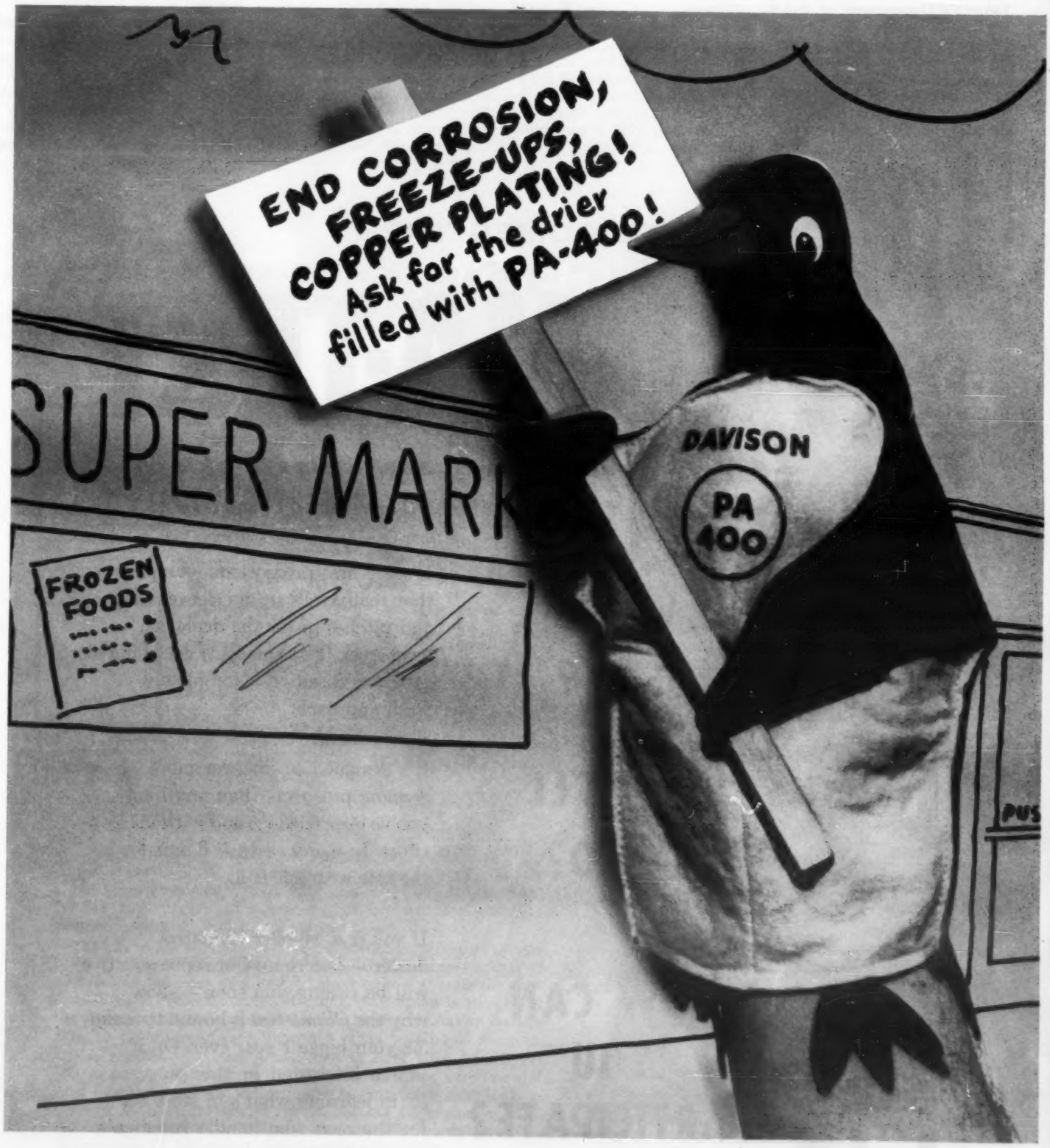
He will be actively involved as a consultant in the marketing activities of the Kelvinator Div. of American Motors Corp., long-time Geyer client. In effect, this marks a return by Packard to an industry in which he has been a key figure.

From 1940 until 1955, he was associated with Kelvinator. He joined McCann-Erickson Inc. in 1955 as vice president and senior marketing executive, and subsequently was executive vice president of Market Planning Corp., a McCann-Erickson subsidiary. He resigned this latter post in 1956 to engage in personal business in New England.

Prior to joining the Kelvinator Div., he was with General Motors Radio Corp. and then for several years directed department and furniture store sales for Frigidaire Corp.

Hupp Prepays Loan

CLEVELAND — Hupp Corp. announced it has prepaid the remaining $2 million outstanding under an original $5,300,000 loan obtained in early 1956 to purchase the majority stockholdings of Gibson Refrigerator Co., now a Hupp division.



ADSORBS ACIDS. Refrigerants react with water, oils and other contaminants to form acids. These acids attack metals in refrigeration systems . . . cause corrosion, freeze-ups, copper plating. But PA 400® Silica Gel removes moisture *before* it can form acids. What's more, it removes any acids already in the system! So ask for the drier filled with PA 400. Both you and your customers will be happy you did. See your distributor tomorrow.

DAVISON
CHEMICAL COMPANY
Division of W. R. Grace & Co.
Baltimore 3, Maryland

Detroit Cooling--

(Concluded from Page 1, Col. 2)

entering the air conditioning contracting field here.

Leading contractor for the first 11 months of 1957 installed 179 jobs as compared with 239 for the top man in all of 1956. This was well above the 117 units installed by the leader in 1955. Second-high man last year, with 136 installations, also topped the 1955 mark.

Data on city air conditioning installations was obtained by AIR CONDITIONING & REFRIGERATION NEWS through a check of installation permits issued by Detroit's Department of Buildings and Safety Engineering. Figures apply only to the city proper. Suburbs are not included. However, officials believe the Detroit figures probably represent over two-thirds of metropolitan area jobs.

January started the year off with a bang when 97 air conditioning systems were installed in Detroit for the biggest first-month recorded.

October with 189 and November with 213 installations also far surpassed the same months of previous years. Big 1956 with 95 and 65 installations during the same months was second highest in this respect.

Other months' figures show 58 units installed in February, 141 in April, and 241 in June. These three months were topped only in the like 1956 months. There were 72 units installed in March, 135 in May, 241 in July, 205 in August, and 109 in September.

Tabulation showing installation by size of unit indicates that 5-hp. units led in that respect. The 490 of that size continued a leadership trend begun in 1953. Second-high was 3-hp. units with 455, and third was 7½ hp. with 279. Big installations were noticeably lacking in 1957. However, the climb in residential installations seems to have continued. Uses of 1½ and 2-hp. room units in zoned applications brought the total of under 3-hp. air conditioning systems to 341.

A total of 56 different air conditioner makes were installed in the city during 1957, a gain of five over the 51 the preceding year, and the 42 listed in 1955. Continuance of newcomers entering the air conditioning industry appears obvious. Make No. 1 with 239 units installed stands well above No. 2 with its 183, and No. 3's 174.

(Detroit permits for air conditioning installations for December haven't as yet been processed. Breakdowns of city statistics into number of establishments where systems were installed, size of these systems, and horsepower of units by installer and make, and other pertinent data will be published in a subsequent NEWS issue.

NAHB Show Starts Jan. 19--

(Concluded from Page 1, Col. 2)

Most heating and air conditioning manufacturers will set up their exhibits in the Conrad Hilton hotel. A scattering of others will be housed in the Coliseum and the Sherman hotel.

Appliance makers will concentrate largely in the Coliseum. Free shuttle bus service will take builders from one exposition site to another.

NAHB says that 91 exhibitors who missed the show last year have come in this year to fill a record-breaking 781 exhibit spaces.

Theme of the NAHB convention, that will run concurrently with the exposition, centers on "Merchandising and Selling." Findings of the NAHB research house will be a highlight.

Exhibitors of air conditioning, heating, and ventilating equipment and appliances are located as follows:

(CH—Conrad Hilton, SH—Sherman, Col—Coliseum.)

Airtemp Div., Chrysler Corp. .....CH 60, 61
American Brass Co. .....CH 145, 146
American Furnace Co. ....Col. 803-805
American Kitchens .....CH 3 & Col. 795, 796
American-Standard, Air Conditioning Div. .....CH 139-141
Arkla Air Conditioning Corp. .....CH 179, 180
Ben-Hur Mfg. Co. .....Col. 942
Berns Air King Corp. ....CH 350, 351
Borg-Warner Corp. .....Col. 712-722
Bryant Mfg. Co. .....CH 84, 85
Caloric Appliance Corp. ..Col. 825, 826
Carrier Corp. .....SH 401-403
Chelsea Fan & Blower Co., Inc. .....Col. 886
Coleman Co., Inc. .....CH 43-47
Crane Co. .....CH 74-79
Cribben & Sexton Co. .....Col. 834
Delco Appliance Div., General Motors Corp. .....CH 171, 172
Dixie Products, Inc. .....Col. 748, 749
Dormalux Co. .....CH 363
Ductless Hood Co., Inc. .....Col. 931
Edwards Engineering Corp. ...Col. 851
Equipco, Inc. .....CH 347
Florence Stove Co. .....Col. 752
Frigidaire Div., General Motors Corp. ..CH 162-170 & 189-194
General Electric Co., Home Heating & Cooling Dept. ..CH 97-99
General Electric Co., Major Appliance Div. .....Col. 756-760 & 773-777
General Electric Co., Wiring Device Dept. .....CH 112
Geneva Modern Kitchens ....Col. 745, 746, & 787, 788
Heil Co. .....Col. 817-819
Henry Furnace Co. .....Col. 820, 821
Holly-General Co., Div. of the Siegler Corp. .....CH 208, 209
Hotpoint Co. .....CH 48-52
Hunter Div., Robbins & Myers, Inc. .....CH 130
Hydrotherm, Inc. .....CH 341
International Oil Burner Co. ..SH 497
Iron Fireman Mfg. Co. .....SH 557
Kelvinator Div., American Motors Corp. .....CH 1
Lennox Industries, Inc. ....CH 212-214
Leslie Welding Co., Inc. .....SH 505
A. J. Lindeman & Hoverson Co. .....CH 358
Locke Stove Co. .....Col. 944
Majestic Co., Inc. .....SH 436-438
Manitowoc Equipment Works .....Col. 941
Mueller Climatrol .....CH 114, 115
Nu-Tone, Inc. .....CH 323 & Col. 844
Oakland Foundry Co. .....Col. 882
O'Keefe & Merritt Co. .....CH 360
C. A. Olsen Mfg. Co. .....Col. 800, 801
Philco Corp. .....CH 175-178
Preway, Inc. .....Col. 893, 894
Quincy Stove Mfg. Co. .....Col. 762
R & H Guarantee Products Co. .....Col. 891
Radex Corp. .....SH 461
Revco, Inc. .....CH 372, 373
Richmond Plumbing Fixtures Div., Rheem Mfg. Co. .....CH 338, 339 & 356, 357
Samuel Stamping and Enameling Co. .....Col. 763, 764
Sonoco Products Co. .....CH 235
Stewart Industries, Inc. .....SH 490
Stewart-Warner Corp., Heating & Air Conditioning Div. .....CH 39
Talk-A-Radio Mfg. Corp. ....Col. 806
Tappan Co. ....SH 424 & Col. 825, 826
Tennessee Stove Works .....Col. 868
Thermador Electrical Mfg. Co. .....SH 444
Trade-Wind Motorfans, Inc. .....SH 449
Trion, Inc. .....CH 210
Vacu-Flo Div., H-P Products, Inc. ....CH 335, 336
William Wallace Co. .....Col. 971
Welbilt Corp. .....CH 155, 156
Western-Holly Appliance Co. .....Col. 823, 824
Westinghouse Electric Corp. .....CH 90-93
Westinghouse Electric Corp., Air Conditioning Div. ....CH 88, 89
Whirlpool Corp. .....Col. 839-841 & 856-858

FHA and Filters--

(Concluded from Page 1, Col. 5)

to appear in about two weeks. The bulletin will incorporate into ME-13 those changes that have been made since ME-13 was published last August.

The filter requirement is being dropped until the industry can come up with a more acceptable one, Seago said. The requirement said filters shall be sized to provide not less than 1 sq. ft. of total face area per 300 c.f.m. of air and shall be readily accessible.

Air-Conditioning & Refrigeration Institute has been working on a more practical rating requirement for some time.

MUELLER CLIMATROL SALES CLIP
... CLIMATE CONTROL FOR HEALTHFUL LIVING

HERE COMES THE

CLIMA-TEST®

...a sensational new sales-making program for Mueller Climatrol dealers!

WHAT IS IT?

It's the first promotional campaign that really rolls up its sleeves and pitches in for the dealer on a local level. It's a smoothly coordinated program based on a completely fresh approach.

WHAT'LL IT DO?

It's designed to uncover more *genuine* prospects than anything you've ever tried ... and with far less effort. In many cases, it'll nail down the sale with one call.

HOW CAN YOU PARTICIPATE?

If you're a Mueller Climatrol dealer — you're in! Our representative will be calling you soon — show why the *Clima•test* is bound to make '58 your biggest year ever. Or, if you're interested in this program ... in learning what's in store for for the men who handle America's most complete home comfort line — drop us a postcard today!

* plus a separate program beamed at builders to help bring a bigger share of the new home market. Your Mueller Climatrol representative has full details.

Mueller Climatrol®
DIVISION OF WORTHINGTON CORPORATION
2056 West Oklahoma Avenue, Milwaukee 1, Wisconsin
In Canada: 2490 Bloor Street, Toronto 9, Ontario

For more information about products advertised on this page use Information Center, page 18.

UA Local Pickets 3 'Independent' Contractors In Push for San Francisco Bay Area Contract

SAN FRANCISCO — United Association local union 38 is picketing San Francisco Refrigeration Co., Lindell Refrigeration Co., and Carney Refrigeration Co.

Picketing of the contracting firms is an apparent union effort to get reluctant "independent" refrigerant contractors to agree to terms of a Greater Bay Area contract; it is negotiating with the Refrigeration & Air Conditioning Contractors Association of Northern California.

One of the owners of San Francisco Refrigeration is John E. Pierson, president of the Bay Area Refrigeration Contractors Association, and a long-time refrigeration journeyman member of U. A. locals here.

Secretary of Bay Area is Mrs. Pauline Lindell, wife of Gus W. Lindell of Lindell Refrigeration, also long-time refrigeration journeyman member of U. A. locals.

Union Pressuring 34 'Independents'

Local 38 has been pressuring for some time the membership of 34 "independents" who are organized in Bay Area and are against "fringe benefit" union demands.

Bay Area makes a particular stand against hourly rates for joint (contractor-union) conference board use, and against the plan the board has had to "police" the industry.

Union members of the Bay Area contractors group contend a real sustained drive to organize the industry in its own division or local of refrigeration journeymen is needed instead of a so-called "police" plan by the Plumbers local.

President Pierson said Bay Area's position stems from a belief they would be without representation on the board, unable to prevent unneeded contractual levying of money, or prevent unnecessary spending of money on hand.

Cause of Picketing

The immediate picketing situation was brought on by refusal of the larger Refrigeration & Air Conditioning Contractors Association of Northern California to sign a new Greater Bay Area contract.

The contract is to include Sacramento and Stockton and provide "freedom of movement" as well as new jurisdictional divisions of refrigeration journeymen.

RACCA refused to sign because U. A. locals failed to negotiate comparable contracts with "independents" belonging to Bay Area, or with other independents not belonging to any association or to a U. A. local.

San Francisco U. A. local 38 countered RACCA's stand by asking San Francisco central labor council to place members of Bay Area on the "we do not patronize list."

Bay Area officers appeared before Central Council Business Representative Mallioux and stated they have not been given any opportunity to bargain in good faith with the union, even though they, and their attorney, have verbally and in writing requested the opportunity while the proposed greater bay area contract was being shaped up.

Mallioux told Bay Area officers he would not recommend placing their Association membership on the council's list since they were willing to bargain.

President Pierson said Bay Area has 34 members, and 11 of these belong to a local union of the U. A.

Pierson said Bay Area ever since its organization over two years ago has been asking the U. A. unions to organize the industry, including 53 other service shop independents in the bay area who do not belong to any association or to the union.

Urge National UA To Correct Ills

Pierson said union members of Bay Area under date of April 17, 1957, wrote President Peter T. Schoemann of U. A. about conditions in the San Francisco area.

The letter urged the United Association to "enter the picture to correct the ills that beset the industry in this area.

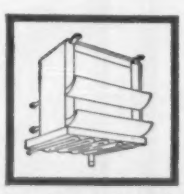
"It has been our experience in trying to clean up the situation," the letter said, "that there has been little or no response to calls made to the local of jobs being worked by non-union men. No effort is made to unionize non-union shops, resulting in a loss of members from the local because of laxity.

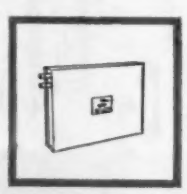
"It is our desire that the United Association either send an organizer to this area to clean up the situation or give consideration to granting a new charter for a new local for this area that would cover refrigeration workers only, thus bringing all refrigeration workers under control under one local."

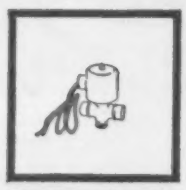
The letter was signed by 19 union members then belonging to U. A. locals.

Frost Free
Care Free
fast, positive and dependable

McQuay ZEROFROST SYSTEM


A new low temperature unit cooler with low pressure drop, built-in heat exchanger and drain pan de-icer. Available in eight sizes.

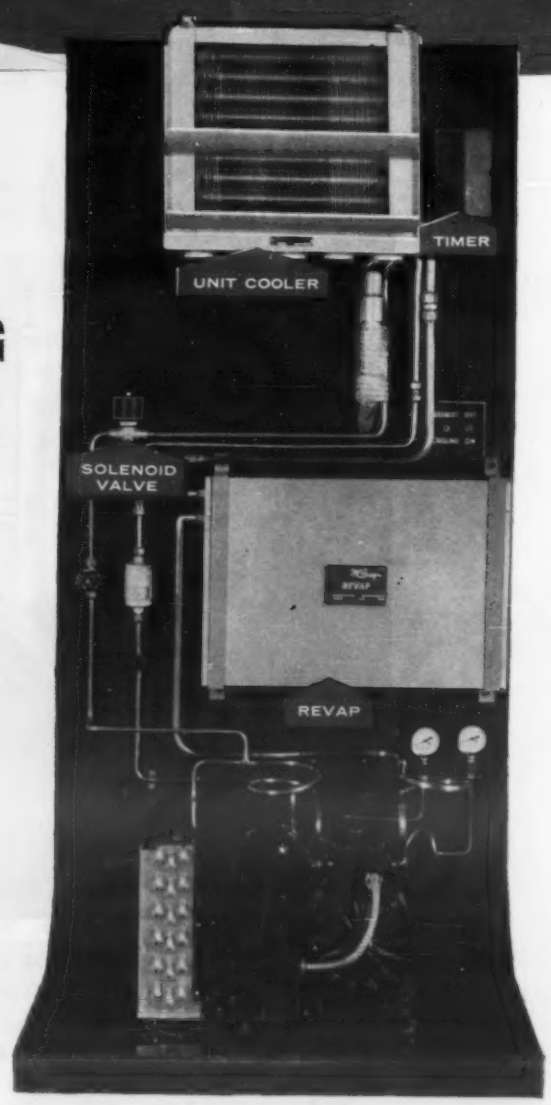

Automatically controlled heat reservoir REVAP, which re-evaporates condensed liquid for quick and positive coil de-icing.


Solenoid valve automatically opens during defrost cycle and diverts hot gas from compressor discharge to evaporator.

Timer can be manually set to a pre-determined frequency, and length of the defrosting cycle as required by existing conditions.

AUTOMATIC HOT GAS DEFROSTING AT ITS VERY FINEST

McQuay Means Quality



THE new McQuay ZEROFROST is the finest automatic hot gas defrost system available. ZEROFROST is designed specifically for low temperature applications, below 35°F. and is fast, positive, dependable and fully automatic. It is frost free and care free, and extremely simple in operation and equally simple to install.

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The ZEROFROST system is available in eight sizes from 3,000 Btu/hr. to 32,000 Btu/hr. at 10° T.D. For frost free, care free and fully automatic hot gas defrosting under any conditions, look to the new McQuay ZEROFROST system. See our representative in or near your city or write McQuay, Inc., 1607 Broadway St. N. E., Minneapolis 13, Minnesota, for complete information.

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Trying to find the right man for a hard-to-fill vacancy—the NEWS' Classified Ads are read by your man.

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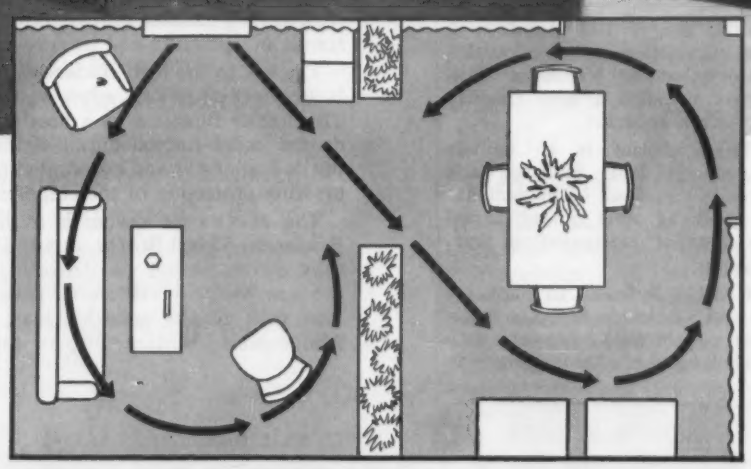
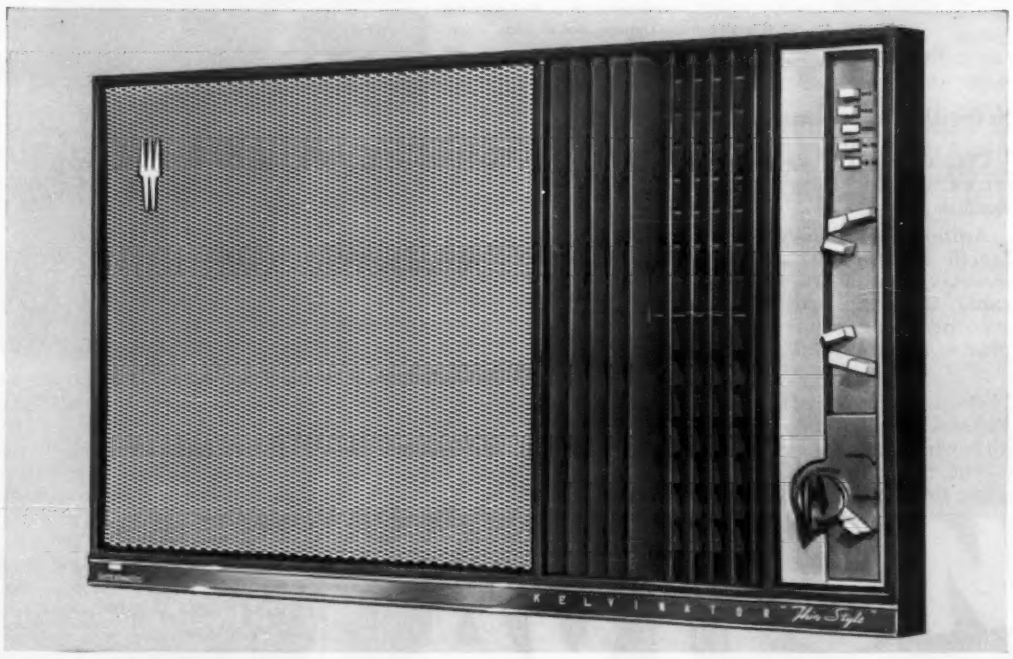
ONLY KELVINATOR GIVES YOU THESE TWO GREAT NEW ROOM AIR CONDITIONER FEATURES TO SELL!

1. Two-Directional Cooling! 2. Filtermatic Signal!



NEW 1958 1 H.P. KELVINATOR COOLS 2 ROOMS! New Kelvinator Two-Directional Cooling gives you the biggest customer-convincer in the room air conditioner business. And only Kelvinator has it! Yes, only Kelvinator gives you the capacity and air flow control to channel cool, clean, refreshing air into two rooms at the same time. It's so easy to demonstrate how cool air can be directed left or right, up or down . . . or left and right and up and down all at once. Simply flick the control knobs that operate the two sets of vertical and two sets of horizontal louvers and your prospects can feel the difference. And when they do, you'll feel the difference in sales!

For more information about products advertised on this page use Information Center, page 18.



6 ALL NEW 1958 "THIN-STYLE" MODELS

. . . So compact—so narrow they fit into 27-inch openings . . . in the window, or through the wall. All have that sheer beauty and subtle elegance you get only with Kelvinator's new "Style Mark" design. Lovely Polar Grey and harmonious Twilight Grey are dominant colors. Entire finish is of highest quality for lasting loveliness.

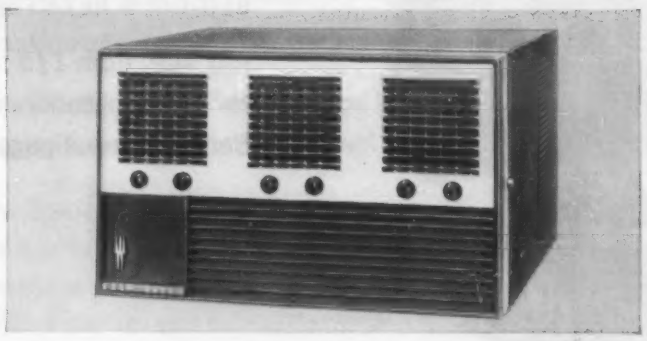
Model	Current	Compressor
RH-1041	12 amp., 115 volt	1 H.P.
RH-1061	7½ amp., 115 volt	1 H.P.
RH-1081	12 amp., 115 volt	1 H.P.
RH-1082	230 volt	1 H.P.
RH-1581	12 amp., 115 volt	1½ H.P.
RH-2082	230 volt	2 H.P.

NEW FILTERMATIC SIGNAL SHOWS RED when filter becomes dirty and needs replacing. It ends guesswork for your customers. As long as Kelvinator's exclusive Filtermatic Signal stays white with the air conditioner on, they know the filter is clean and they're getting full cooling capacity. As soon as the filter becomes dirty, Filtermatic automatically signals "red" and stays RED as long as the filter is dirty and the unit is on. A wonderful sales-making demonstration for you!

"MASTERPIECE" UNIT to the right has 2 H.P., big capacity for cooling large areas, small shops.

BUDGET LEADER BUILDS TRAFFIC . . . with Kelvinator's new 1 H.P. "Challenger" model at a down-to-earth price. A big capacity, 12 amp., 115-volt unit housed in the beautiful, compact "Thin-Style" cabinet. Quality features include: Adjustable thermostat, simple dial controls, adjustable air directional louvers, replaceable glass fibre filter.

CASEMENT WINDOW unit (right) gives you 1 H.P. low amperage, low operating cost to sell. No costly remodeling. Only 7½ amps., installs on any adequate 115-volt circuit.



Kelvinator *OLDEST MAKER OF ELECTRIC REFRIGERATORS FOR THE HOME*

DIVISION OF AMERICAN MOTORS CORP., DETROIT 32, MICHIGAN

American Motors Means More for Americans *Live Better Electrically*

REFRIGERATORS • WASHERS • DRYERS • ELECTRIC RANGES • FREEZERS • ROOM AIR CONDITIONERS

For more information about products advertised on this page use Information Center, page 18.

Inside Dope

By GEORGE F. TAUBENECK

(Concluded from Page 1, Col. 1)

radio.—*New York Herald Tribune.*

No traffic detour will be necessary today when the bride is moved one foot for a test roll, the police chief added.—*Providence Evening Bulletin.*

Girl for photo-finish plant, to develop prints and handle three oversize printers—Adv. in the *Denver Post.*

Reading Us Carefully

Moreover, quite a few subscribers now are examining AIR CONDITIONING & REFRIGERATION NEWS to discover our own slips. Sample letters:

Jack Molino Chevrolet Co.
Walnut Grove, California

Editor:

I always enjoy reading your publication, especially "Inside Dope."

I was very much amused by your collection of "typos," and more so by part of the item on spaghetti and meat balls. When describing the contents of a quart container of them, I wonder who got the meat balls, as there could be no room in a quart of spaghetti for any meat balls.

ROGER W. GLEASON

Worthington Corp.
Cleveland, Ohio

Editor:

Referring to your "Inside Dope" about typographical errors, please refer to attached clipping from your periodical: ("Worthington Corp. — William A. Meiter has been appointed to the newly created cost of vice president-employe relations and organization development.")

There can be no doubt regarding "the newly created COST."

I cannot express my exuberance in discovering someone else goofs where all can see. Congratulations! Your publication (otherwise) is excellent—Keep up the good work.

PAUL R. MCGUIRE,
Regional Serv. Supervisor

Scintillating Gems

Choice gems of typographical errors sent to "Dope" by loyal readers include:

Anthony Eden underwent his fourth operation to remove an obstruction in a bile duct. The canal is being opened to an ever-increasing volume of shipping.—*Allentown Call.*

The Director the Miss Canada Pageant, announcing that the girls would be judged in evening gowns rather than in bathing suits, stated: "I have fought for five years to get the bathing suits off the girls."—*Kitchener* (Ont.) *Record.*

George Gobel Delivers the Goods

NBC-TV STAR GEORGE GOBEL helps unload an RCA Whirlpool freezer being delivered to Mrs. Fred J. Schneider of Cincinnati, Ohio, first-prize winner in a national "George Gobel Show" contest. In addition to the freezer, Mrs. Schneider won an RCA Victor color television set—and services of George Gobel for her hometown for a day. Gobel's civic activities included serving a cafeteria-style luncheon to 2,000 high school students, a visit to an orphanage where he entertained 200 youngsters, followed by a brief stint of traffic "mis-directing." On the WLW-TV Ruth Lyons program, Gobel presented a basket of California fruit, from Governor Knight, to Ohio Governor O'Neill. Later, Gobel urged support of the "Mother's March on Polio."

Large room, adjoining bath—nice room for man and wife or stenographer.—*Helena* (Mont.) *Independent.*

Girl wants board and room in private home. Non smoker, noon drinker.—Adv. in *Winnipeg Free Press.*

Michael Parker, constant companion of the Duke of Edinburgh, will resign as the duke's private secretary because of his right with his wife. — *Toledo Blade.*

As an encore, Miss Brown played the old favorite, "Carry Me Back To Old Virginity."—*Winfield* (Kan.) *Courier.*

Loes Hurls Birds Over Kansas City.—*Charleston* (S.C.) *News and Courier.*

The Government unveiled its new income tax forms, including a simple 15-lie card for wage earners. — *Galveston* (Tex.) *News.*

G. E. Automatic Blanket—Insure sound sleep with an Authorized G. E. Dealer.—*Three Rivers* (Mich.) *Commercial.*

The proceeds of this benefit will go to Kappa Alpha Theta's National Philandering Project.—*Bloomington* (Ind.) *Daily Herald-Telephone.*

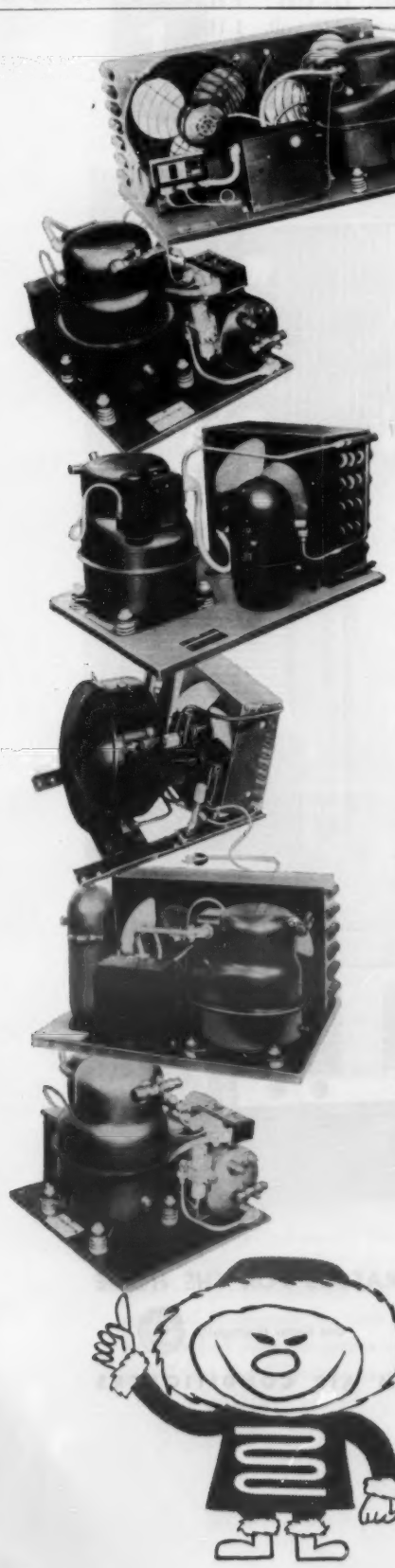
Rev. Hammond was congratulated on being able to get his parish plastered. — *Tujunga* (Cal.) *Record-Ledger.*

Mrs. White is assisting in the care of her mother in Iowa, so Mr. White is straying at the local hotel. — *Plymouth* (Ill.) *Tri-County Scribe.*

Happy fans ate 41,000 hot dogs at a recent doubleheader drawing 32,346 fans. Also, 27,000 bags of peanuts, 26,000 ice cream bars, 30,000 soft drinks, 18,000 scorecards, and 7,500 cushions. — *Chattanooga Times.*

Caplan, with his infectious gin, is a man liked by all who meet him. — *Dallas Morning News.*

New Hampshire has come up with a couple of intercollegiate scoring prospects in Tom Johnson, 56-foot weight thrower, and Maurice Carter, 13-foot 4-inch pole vaulter.—*New York Times.*



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the **capacity** you want...
the **quality** you expect...

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Any size, from 1/5 to 2 H.P.
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Send for new 4-page catalog sheet.

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EXPORT DEPT.: 13 East 40th Street, New York 16, N. Y.

For more information about products advertised on this page use Information Center, page 18.

Don't throw CAUTION *to the Winds!*

Note the full-view sight glass around the moisture indicator that lets you "see" if the refrigerant charge is too low, or the liquid line is restricted

Install the amazing NEW SPORLAN *See•All*

TODAY••• with the Moisture Indicator that warns you *before* the moisture content of the refrigerant reaches a harmful level!

It's Foolproof Too! The Sporlan SEE•ALL has but ONE moisture indicator for either Refrigerant 12 or 22 with the color changes the same for BOTH! No chance of a mix-up over refrigerants when You install the SEE•ALL.

Just remove the plastic dust cap and a glance will tell you... If the indicator is Green, the refrigerant is safely dry. If it is Yellow, it is too wet for safety. But before changing from Green to Yellow the Sporlan SEE•ALL indicator becomes Chartreuse, *the caution period* that warns you *before* the refrigerant becomes harmfully wet!

So...Don't throw caution to the winds... *Order Sporlan* SEE•ALLS *from your Wholesaler today, then you can be sure that you will be warned in time to avoid costly freeze-ups and corrosion repairs due to moisture... and remember, if your* SEE•ALL *shows caution, don't wait until it shows wet... Replace the drier immediately with a Sporlan* Catch-All, *and watch the* SEE•ALL *give you the green light!*

Ask your Wholesaler, or write direct for **BULLETIN 70-10**

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BUY SPORLAN

Catch-All FILTER-DRIERS

with the Original Molded Porous Core that now offers Even Greater Drying Capacity!

Through constant engineering research, Sporlan has developed a new blend of desiccants that gives the Sporlan Catch-All even greater drying capacity, while maintaining ALL the original features that have made it the odds-on choice in the filter-drier field since 1948!

The Famous Sporlan Molded Porous Catch-All Core...

WHAT IT IS... and WHAT IT DOES!

It is molded of minute particles of a blend of highly efficient desiccants, which, after complete assembly as a Catch-All, is activated to the highest degree of dryness...a minimum of four hours at over 500° F., then immediately sealed against any loss of activation before installation.

It dries the refrigerant down to an extremely low end point . . . a point so low that any remaining moisture is absolutely harmless!

Its tremendous cylindrical, tri-dimensional filtering area unquestionably offers the only true filtering device capable of filtering out foreign matter with negligible pressure drop. It cannot powder... It cannot pack... and the refrigerant cannot by-pass, or channel around it. Harmful corrosive acids are adsorbed and retained within the core itself!

For perfectly clean, perfectly dry refrigeration and air conditioning systems . . .

PLAY IT SAFE . . .

buy Sporlan Catch-Alls, the perfect filter-drier with the famous molded porous core that now gives you even greater drying capacity... buy Sporlan See-Alls too, the amazing new moisture-liquid indicator that eliminates the guess-work and worry on all installations!

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EXPORT DEPT: 85 BROAD STREET, NEW YORK 4, N. Y.

Contractors Who Need Money To Grow Could Try SBA, Dealer Says

CHICAGO — Air conditioning or heating contractors in need of money for expansion would do well to investigate Small Business Administration loans, believes a small dealer who's done that successfully.

Ernest H. Roberts, owner of the E. H. Roberts Co., Elyria, Ohio, explained how he obtained such a loan in a talk before the 44th annual convention of the National Warm Air Heating and Air Conditioning Association.

How To Qualify For SBA Loan

To qualify for such a loan the applicant must present "evidence that he has the ability to operate his business successfully," Roberts said.

"He must have enough capital in the business so that with SBA assistance it will be possible to operate on a sound financial basis. The proposed loan must be of sound value and secured as reasonable to assure re-payment, and most important, the past earnings record and future prospects of the company must indicate his ability to re-pay the loan out of income from the business."

Records Must Reflect True Picture of Business

Adequate records reflecting the true picture of the business are essential not only for obtaining an SBA loan but for successful operation of the firm, Roberts emphasized.

"While it would be wrong to say that poor record-keeping is a direct cause of business failures, it is also an established fact that most bankrupt businesses do have sloppy records," he pointed out.

There's more to it than just keeping good and adequate records, however, Roberts cautioned.

"One of the chief reasons for keeping good records is to provide the tools that management needs to operate the business, and management must take advantage of these records by digesting the financial statements so completely that each apparent pitfall is quickly plugged and good results made even better by a careful appraisal of each segment of the operation," he said.

Reviewing the steps that led to his applying for an SBA loan, Roberts explained that "my business was started in the fall of 1954 on what I consider extremely limited capital. We were most fortunate to situate our business in the midst of an area going through great economic and industrial expansion.

"I purchased a lot and built a shop of approximately 1,000 sq. ft., thinking this space would prove more than sufficient for several years to come. Before the year had expired I was laying the foundation for an additional 2,000 sq. ft. of shop space. The expansion program was motivated by necessity.

"As the months passed our sales increased beyond our wildest expectations, and last year at this time I was beginning to realize something that had bothered me for several months, i.e., I did not have enough working capital, nor the type of machinery to make my operation more efficient, not enough money to buy at quantity discounts, and not enough reserve capital to support an expanded working force if the case occurred," Roberts declared.

In addition, he said, he was being forced to turn away commercial type business.

At the suggestion of his accountant, Roberts approached the local banker, to whom he'd been sending financial statements for two years, with the aim of getting an SBA loan with the bank's participation.

Although SBA also makes direct loans and disaster loans, 65% of its loans are with bank participation, which offer the advantage of faster processing of the loan application plus continued contact with the bank as well as bolstering the community's economic picture by bringing in outside money, according to Roberts.

In his case, Roberts explained, the local bank put up 25% of the loan and SBA, the balance. He applied on Nov. 1, 1956, and received it May 1, 1957.

What Expansion Program Involved

"My expansion program involved paying off all outstanding indebtedness such as the mortgage on the building, truck, and other current payables; purchasing equipment which would ultimately make me more competitive; starting a service company by the purchase of trucks and establishing an inventory, and maintaining a good cash reserve for payroll and buying material in quantity," Roberts disclosed.

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One of largest stocks in the world!
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PROVE IT TO YOURSELF
...how much stronger...how much safer
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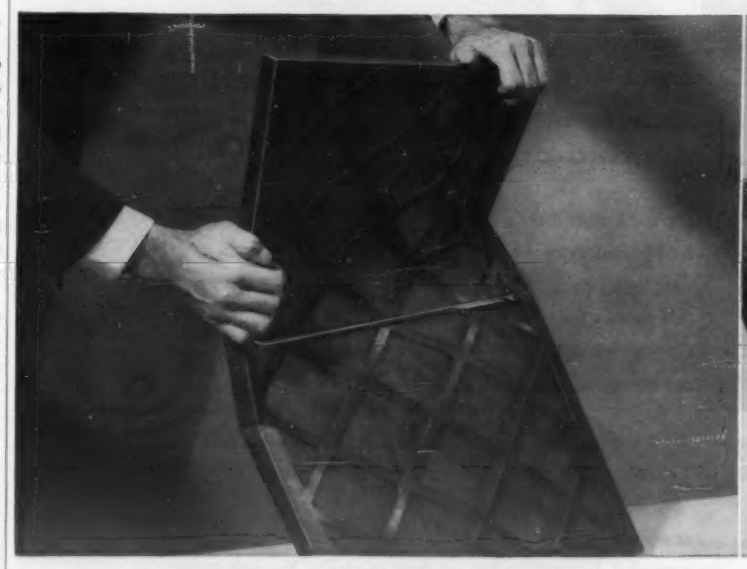

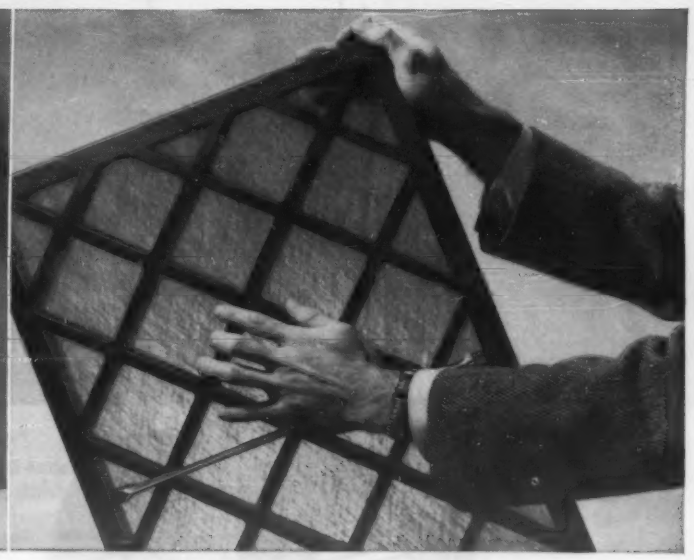

1. Bend it—and the new Glasfloss Safety-Grille Filter bounces right back to its original shape. Old type metal-grille filters don't. Unless you re-bend them, they stay bent out of shape and can cut down filtering efficiency. Strong construction of Glasfloss Safety-Grille Filters means less chance of damage in transit, in storage, in handling.

2. Feel the grille edge—it's chipboard, and perfectly safe! No sharp edges—no cuts, no scratches to worry about!

For maintenance personnel, the new Glasfloss Safety-Grille eliminates any danger of cut hands or wrists and possible infection when changing filters.

Plus these features... Glasfloss Safety-Grille Fiber Glass Filters . . .

—have same available filtering area and initial pressure drop as old-type filters
—are tested and proven in service
—are approved by Underwriters' Laboratories, Inc.

Make these tests: Try PPG's new Glasfloss Fiber Glass Safety-Grille Filters in your heating and air conditioning systems. Get top filtering results! They're available in a complete range of sizes from your local distributor or PPG Warehouse.

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FIBER PG GLASS PITTSBURGH PLATE GLASS COMPANY

Air Distribution Requirements In Year-Round Air Conditioning

9. Fundamentals of Conditioned Air (Cont.)

By Frank D. Klein, Chief Engineer, Governair Corp.

Frank Klein has been associated with the air conditioning and refrigeration industry for over 20 years. An engineering graduate of the University of Michigan, he has held executive positions with a number of leading manufacturers, and has served as a consultant to both manufacturing and distributing firms, in the heating as well as the cooling field.

The Thermal Effect of Activity by human beings in a confined space also is a segment of the Physiological Index of Comfort and the consequent required Effective Temperature. This Thermal Effect of Activity was briefly pointed out in previous paragraphs in illustrating latent heat and sensible heat.

Metabolism is the physio-chemical process that varies in the human body with the rate of activity. The thermodynamic function of the human body through metabolism, or oxidation, acts much like a year-round heating-cooling system. The heat that results from the physio-chemical process of metabolism or oxidation, is sufficient under average sub-normal temperatures to keep the body warm and by radiation, convection, and evaporation in average abnormal temperatures will act to keep the body cool.

With normal body or blood temperatures established at 98.6° F., the degree of sub-normality or abnormality whereat the Physiological Index of Comfort can be determined is directly reflected in the Effective Temperature as influenced by the Thermal Effect of Activity.

We saw in the previous text that people sitting down or resting gave off a Total Heat of 400 B.t.u. per hr., whereas those same people working, dancing, or otherwise quite active gave off 660 B.t.u. per hr. This Total Heat reflected in the Thermal Effect on the Physiological Index of Comfort, thus changing the requirement for an Effective Temperature rose rapidly—to 1,500 B.t.u. per hr. for people bowling, playing tennis, etc.

Thus the Thermal Effect of Activity by the human body can be said to be in direct ratio to the Heat Interchange induced by the activity as established by the rate of oxidation or metabolism. And that this rate of interchange has a direct effect on the requirements of an Effective Temperature.

As we have observed in our prior basic discussion on the Effective Temperature, that the sensation of the human body to feel comfortable, or to be at the Physiological Index of Comfort, depends on all of the foregoing information relative to dry-bulb temperature, wet-bulb temperature, air velocity, and radiation effects of the body as influenced by the rate of evaporation, etc. We are told that this phenomena, as influencing the sensation of feeling warm or cold, is called Thermo-equivalent Conditions as establishing the Physiological Index of Comfort.

While researchers such as Yaglou, Houghten, Drinker, DuBois, Hardy, Winslow, and many others have attempted to establish a mean group of Thermo-equivalent conditions, thus establishing a common denominator under given conditions for the Physiological Index of Comfort, there is still no exact single physiologic observation by which this can be done.

Importance of Effective Temperature

Thus is emphasized the importance of producing an exact EFFECTIVE TEMPERATURE in the home dwelling suitable to each specific demand and installation. The effect of Air Psychrometry on specific Comfort Conditions must by necessity be established scientifically in order to produce that Effective Temperature where a Physiological Index of Comfort is found suitable to the specific conditions involved.

The human body and its regulatory system governing the sensory effect from heat and cold is a wonderful, complex, and normally a snap-acting thing. The body regulatory system senses immediately Effective Temperature changes, sets about to adjust to them then modulates the circulatory system, which in turn tries to reach an optimum of adjustment with the respiratory system.

When over-optimum or under-optimum conditions present themselves, a point is reached in one direction or the other where the regulatory system no longer can compensate for the condition; it is here where mechanically created atmospheres must step in and lend a hand.

Humans Can Adjust to Shock Temporarily

Under even abnormal conditions the human body can adjust itself for a time to sensory shock for either heat or cold; this is also true to conditions affecting the respiration of the body. However, this compensation in all cases operates within a limit of time and conditions.

People entering a theater or supermarket in the summer time whose temperature is an average dry bulb of 74-76°, with the outside temperature, dry bulb, in the 95° range experience a slight shock, yet a pleasing cooling effect; however, this sensory perception is not due to the dry-bulb .temperature differentials, but to the Effective Temperature.

Furthermore the sensation is not one of that lowering the skin temperature or body temperature at first but the process of evaporation of the sweat on the skin and evacuation of the moisture collected in the clothing. According to studies conducted by many researchers in conjunction with A.S.H.A.E. studies, actually falling off or "cooling" of the skin and other parts of the body does not occur

(Continued on next page)

STRONG

SILENT TYPE

NEW DIRECT DRIVE BLOWER FOR HEATING-COOLING COMBINATIONS

For some time there's been a *quiet* revolution afoot at Utility. And manufacturers of heating, cooling, refrigerating and ventilating equipment are solidly behind it. Newest creation of this passion for silence is a burly brute of a direct drive blower. We call it "Big Boy," newest of a new breed—the strong, *silent* type.

With airflow capacity great enough to handle up to 125,000 BTU—3-ton heating-cooling combinations, "Big Boy" will deliver approximately 1,400 to 1,500 CFM at a static pressure of 0.80" WG to make it the most powerful direct drive blower now available. Yet, low outlet velocity makes it ideal for residential units. Extremely compact, and easily speed-controlled, it is equipped with Neoprene hubs and super-quiet permanent split capacitor motor to give the sales appeal of silence to your equipment.

For quality you can count on, check Utility's silent "Big Boy" Direct Drive Blower. In blowers and parts, you'll always find that . . .

YOU CAN'T MATCH UTILITY FOR PRODUCT AND PRICE!

A DIVISION OF UTILITY APPLIANCE CORP.

UTILITY FAN CORP.

911 East 59th Street, Los Angeles 1, California

Manufacturers of heavy and standard duty blowers for heating, air conditioning and ventilating installations. Producers of blowers and blower parts for original equipment manufacturers. Write for catalogue data.

For more information about products advertised on this page use Information Center, page 18.

Air Distribution - -

(Continued from preceding page)

for several minutes after exposure. This same phenomena of Thermal Adjustment of the body takes place on exposure to heat from cold, but in a reverse pattern.

Probably the best source of the effect exercised by the Effective Temperature producing the Physiological Index of Comfort may be found in A.S.H.A.E. (A.S.H.V.E.) Reports 1102 and 1055. These definitely outline that the Physiological Index of Comfort for year-round living is established by a Dry Bulb reading of from 73-77° F. with the Relative Humidity in the range of 25-60%; which is the range that should be adopted in both cases for comfort conditions in year-round residential installations: this with air velocities in the range of 25 f.p.m.

Key to Human Comfort

Therefore from the foregoing we must once and for all establish that the Effective Temperature, in turn establishing the Physiological Index of Comfort, is the key to customer satisfaction and the key to proper installations. We know by review that the Effective Temperature cannot be established without knowing the processes involved in producing air atmospheres of proper "quality" for the conditions involved. We see now that the production of "quality" in air atmospheres is dependent on many things, not merely temperature as evidenced by a dry bulb reading.

To properly approach the design of a system, the Psychrometry of air must be understood, before the equipment is selected with which to distribute that air. As "Air Conditioning Engineers" we must truly learn to condition the air suitable to the purpose intended; we must learn how to take a given quality and in turn change that to the quality desired by the processes involving Thermodynamics and Chemistry, before we can apply the necessary Aerodynamics for subsequent distribution.

The foregoing is intensely important in the residential year-round field as previously outlined, for the American public spends better than 73% of its time in the home.

(To Be Continued)

No. Calif. RACCA

Cooling Prospects, Store Operator Service Talks To Highlight Jan. 18 Convention

SAN FRANCISCO—First annual convention of the Refrigeration and Air Conditioning Contractors Association of Northern California will be staged Saturday, Jan. 18, in the Flamingo hotel in Santa Rosa, 50 miles north of here.

TO HEAR 18 TALKS

A full day's program includes 18 speakers, plus election of directors and installation of officers, topped by a dinner dance.

Four of the speakers are coming from outside the northern California area. They are C. L. Walling, president of RACCA national, from Los Angeles; Joseph Monahan, head of the refrigeration section of United Association, from Washington, D. C.; Don Petrone, president of Typhoon Air Conditioning Co., Div. of Hupp Corp., from Cleveland; and A. B. Biddle, executive vice president of Hussmann Refrigeration, Inc., from St. Louis.

Both Walling and Monahan are luncheon speakers. Petrone and Biddle will speak during the afternoon; Petrone on "Your Air Conditioning Prospects," and Biddle on "Services I Would Offer a Supermarket Operator."

John Linford, president of RACCA of NC, said all contractors, whether members of the association or not, are invited.

Registration details may be obtained from association headquarters at 2595 Mission St. here. Jack Lang of Shirar-Young here is convention chairman.

M. M. Smith, executive secretary of the association, will welcome conventioneers at 9 a.m. Linford will then report on association activities. He will be followed by Kenneth Zappettini of Donnelly and Zappettini here, who will report on activity by the refrigeration joint conference board. Union relations will be covered by Smith.

At 10:35 a.m., the association will hold its business meeting and elect new directors.

After luncheon and talks by Walling and Monahan, the afternoon session will commence with a talk on "How I Would Get Working Capital for Expanding My Business," by Clint Luhmann, vice president of the First Western Bank here.

He will be followed by Biddle, Petrone, and James Scatena of Scatena York Co. here. Scatena will discuss "Selling Specialty Refrigeration Lines."

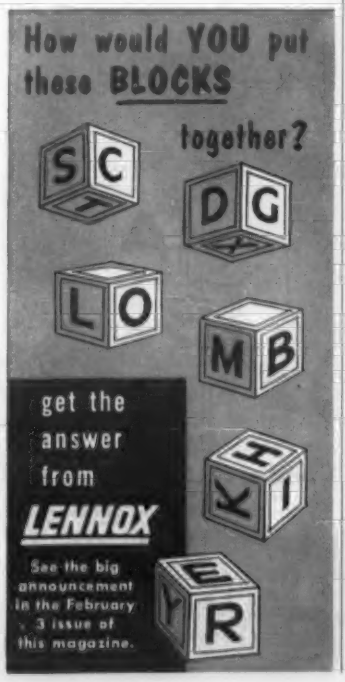
A panel discussion on "Your Service Business" will include:

"How Important Is Your Serviceman," by Grant Adams of A-1 Refrigeration, San Jose and Salinas.

"Pricing Your Services," by W. W. Humburg of Ray Winther Co., South San Francisco.

"How to Make Money In Your Service Business," by W. E. Scott of Scott Refrigeration Co., San Francisco.

"The Pitfalls of the Service Business," by Herschel O. May of Industrial Installations, Inc., Berkeley.



HALSTEAD & MITCHELL ENGINEERS SAID...

"TURBU-FLO AIR-COOLED CONDENSERS PERFORM BETTER"

Extra-large coils and exclusive Turbu-Flo fins add more coil surface. Embossed fins create better "air wash," thus reducing air film resistance and increasing heat transfer by up to 15%. Wide fin spacing—six per inch—keeps coils from clogging with dirt or other air borne particles, assures lasting high performance and lowest maintenance costs.

Sturdy, lock tight construction with double-coated vinyl finish makes H&M Air-Cooled Condensers last years longer—without vibration and rattling. Slow speed, deep pitched fans and draw-through design provide full capacity—quietly.

Because of these facts, Halstead & Mitchell Air-Cooled Condensers are in greater demand than ever. Write for Catalog AC-101 for complete details on Remote Air-Cooled Condensers; ACR-100, on Residential. *Halstead & Mitchell, Bessemer Building, Pittsburgh 22, Pennsylvania.*

HM Halstead & Mitchell

For more information about products advertised on this page use Information Center, page 18.

Successful Rebuilding of Hermetic Motors Requires Same Care as Initial Production

CHICAGO—"If you can't rebuild hermetic unit motors the same way new ones are built, don't even start," cautions Bryant L. Britt, manager of Electrical Service Dept., Wagner Electric Corp.

"Immaculate cleanliness is needed for both the manufacture and repair of hermetic motors," Britt told the Refrigeration Service Engineers Society at its 20th annual convention here.

Such motors can be rebuilt successfully, however, provided extreme care is taken, he said.

If you must replace the stator, you must replace it with the identical unit which must be obtained from the manufacturer of the hermetically sealed unit, rather than from the motor manufacturer, Britt explained.

Otherwise, you must rewind it identically with the stator you removed from the particular refrigeration unit.

'Perform Work In Dust-Free Room'

All motor rebuilding work should be performed in a dust-free room where the humidity and temperature are carefully controlled, Britt also emphasized, pointing out that motor manufacturers themselves conduct "extraction tests" on rotors and stators to determine the residue of dust or "extractables" left on them. The maximum permissible limits of "extractables" are exceedingly small—a fraction of a gram—he said.

Work benches should be covered with clean, purified cloth or "VPI" paper, which should be replaced as soon as it gets dirty, according to Britt.

"Selection of materials for motor rebuilding is most important," Britt commented. "It's not difficult to get these supplies, but make sure you know what you're getting, and that the supplier knows exactly what the materials are for," he warned.

"Only suitable wire, tying cable, wedges, etc., can be used. We at Wagner recommend only heavy Formvar wire, for example.

"Rotors rarely fail. In fact, we have no record of rotor failures in hermetic units. In rebuilding, however, they must be cleaned just as the stator is cleaned," Britt explained.

Even the stator that hasn't been obviously burned out must be cleaned before being electrically tested, he said. The stator from a wet system, for example, may contain so much moisture that the insulation will break down when the stator is subjected to the high voltage ground test.

'Can Use Several Cleaning Methods'

"Several methods of cleaning can be employed using one of the following solutions: chlorothene, 'Freon,' or a mixture of 50% naphtha and 50% carbon tetrachloride. But if you use the latter, the shop must be properly set up to protect the employes from the fumes of carbon tet," Britt cautioned.

"The rotors and stators should be washed with a reciprocating motion, or they may be placed in a rack which is alternately lowered and then raised in and out of the cleaning solution.

"Immediately after the parts have been cleaned and drained they should be placed in an oven held at 275° to 290° F. for drying. Stators should be baked for an hour after the stator reaches a saturated heat of 275° F. After drying, any spots other than rust should be protected with a rust preventive oil that is compatible with refrigerant and the parts covered with VPI paper."

'Discard Part With Rust Spots'

If there are any rust spots, the part should be discarded, chiefly because rust can damage the system, Britt explained. Also, some surfaces of the motor act as a seal, so any surface irregularity may cause a failure at this point. For this reason the parts should be handled carefully to prevent scratches and dents, he added.

Following cleaning and drying, the stators should be tested electrically. Chief problems here are continuity and grounds.

A continuity test can be made with a low voltage from 6 to 110 volts with a test lamp in series. The test for ground is made at twice the rated voltage plus 1,000 volts, Britt said.

If these tests indicate that the stator has to be rewound, or if the stator has obviously been burned out, the windings are stripped from the core and the core is cleaned as outlined before. If there are any rust spots in the core, it should be discarded.

"The windings must be put in very tightly and tied to prevent any shifting," Britt advised. "Then bake the stator at 275° to 290° F. for an hour after all parts of the stator have reached a temperature of 275° F. On larger motors, 3 hp. and above, the free ends of the windings should then be dipped in a suitable varnish and baked again as recommended by the varnish manufacturer.

"Now the rebuilt motors are ready for electrical testing.

"While all this may seem impossible to do, it is being done on a reasonably economical basis," Britt concluded.

STEEL TUBING TIPS:

HOW TO CUT COSTS ON REFRIGERATION SERPENTINES BEFORE AND AFTER INSTALLATION!

GM Steel Tubing's multiple benders plus exclusive quality controls add up to substantial savings.

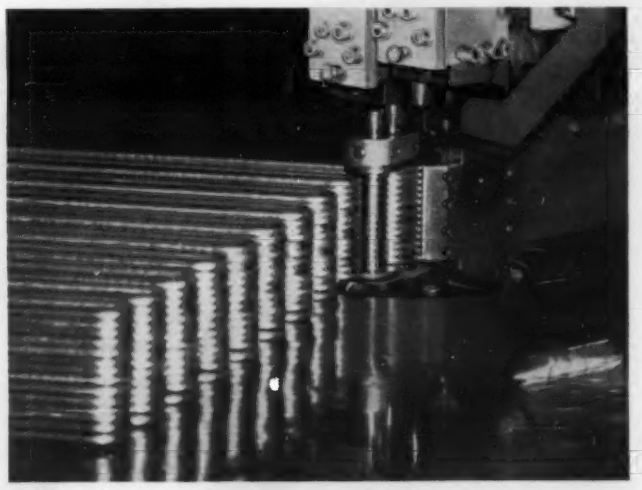
Leading refrigeration manufacturers have realized substantial savings with GM Steel Tubing Serpentines—before and after installation.

A large part of these savings are due to the unmatched fabrication facilities at Rochester Products. Fast, efficient mass production of serpentines, made to your exact specifications, cuts production time and lowers your tubing costs.

Many refrigeration makers who maintain their own fabrication facilities have learned that they cannot duplicate the economy of GM Steel Tubing methods. For example, all straight lengths of GM Steel Tubing are rotary-straightened before the serpentine is formed. This exclusive process assures flatness and contact at all points on weld-wire condensers. And this extra-quality measure adds nothing extra to your tubing costs.

Rochester Products also takes extra steps to insure savings after the serpentine is installed in your product. To reduce warranty costs and to protect trouble-free operation, all coiled tubing is pressure-tested with a solvent under 6500 psi. This makes sure that the tubing is absolutely leak-free and cleans the I.D. to many times beyond specifications. In addition, each serpentine is individually tested for further dependability and cleanliness.

These rigid quality controls—standard procedure at Rochester—pay off in greater customer satisfaction and warranty savings for you. And GM Steel Tubing offers them to you at *no extra cost.*



This multiple serpentine bender precision-bends up to 20 serpentines at one time. This exclusive machine was designed and developed by Rochester to speed production of top quality serpentines.

Rochester Products has the facilities to do the complete job. For example, end treatments such as deburring, flaring, die sizing, swaging, beading, flattening and crimping can be performed on automatic equipment. GM Steel Tubing for refrigeration applications is available in bulk random length coils, specific cut-to-length coils, straight lengths, partially fabricated straight lengths and serpentines for use in condenser, evaporator or other refrigeration uses.

Look into the savings GM Steel Tubing can produce for you. Contact your GM Steel Tubing Sales Engineer or write to: Tubing Sales Manager, Rochester Products Division of General Motors, Rochester, New York.

GM STEEL TUBING by ROCHESTER PRODUCTS

See the dramatic ANNOUNCEMENT IN THE FEBRUARY 3 ISSUE OF THIS MAGAZINE

For more information about products advertised on this page use Information Center, page 18.

Chemist Believes

Refrigerant-12 Held In Plastic Bag Can Be Good Refrigerator Insulation

CHICAGO—"Anything which would increase the internal volume of a refrigerator without increasing the external dimensions would be a highly attractive sales feature."

Pointing out that the only way to do this would be to reduce the thickness of the walls, Dr. H. M. Parmalee, research chemist of the Freon Products Labortory of du Pont, reported on tests he has conducted concerning the permeability of plastic films to refrigerant-12 and nitrogen.

Speaking at the 44th semi-annual meeting of the American Society of Refrigerating Engineers, Dr. Parmalee acknowledged the work of other investigators who had determined that one of the most efficient ways to increase the efficiency of insulation is to replace the air in the insulation with a heavy gas.

"Refrigerant-12 is especially suited for this purpose," Parmalee pointed out, "because it is a heavy gas and is non-toxic and non-inflammable."

"It is necessary to keep the Refrigerant-12 in the insulating space and to keep the surrounding air and moisture out. The most promising solution is to enclose the sections of insulating materials in bags of some material which is readily sealable and is impermeable to Refrigerant-12, air, and moisture."

Parmalee described the test procedures used in evaluating various plastic materials for such permeability and reported that aluminized Mylar polyester film and polyvinyl alcohol film show promise as the components for making laminated plastic films for insulation.

He pointed out that mathematical calculations made it possible to predict a fifteen year life for such insulation, although such practical items as fabrication techniques and use will have a bearing.

From the floor came the comment that in addition to moisture, there would be the added problem of volume changes and subsequent pressure changes whenever temperatures varied. The pressure could in some cases be enough to rupture the sealing envelope around the gas or even the walls themselves.

Parmalee agreed that there are several practical problems which prevent immediate adoption of this method of insulation, but stated that the preliminary results warrant more investigative work.

Looking for a Career?

ARI Booklet Tries To Lure Young Men Into Refrigeration Field

WASHINGTON, D. C.—"Your Future in the Air Conditioning and Refrigeration Industry," a 20-page booklet designed to interest young men seeking careers in the many fields open to them through present and future adaptations of mechanical refrigeration and air conditioning, has been published by the Air-Conditioning & Refrigeration Institute here.

"The air conditioning and refrigeration industry offers a bright future for thousands of young men who will come out of high schools, colleges, and technical training courses," the booklet points out, citing a statement from the Bureau of Labor Statistics:

"The continued increase in the use of refrigeration and air conditioning equipment in the nation's factories, commercial buildings, and homes in the late 1950's and the 1960's is expected to create a demand for thousands of additional mechanics who can install, maintain, and repair refrigeration and air-cooling equipment. The number of refrigeration and air conditioning mechanics is expected to grow at a faster rate than the labor force as a whole. . . ."

The publication also considers the opportunities available to college-trained engineers.

Single copies of the brochure may be obtained by teachers from ARI, 1346 Connecticut Ave., N.W., Washington, D. C., without cost.

Death Notices

Harry A. Wilson, Sr., founder and chairman of the Wilcolator Co. and the H. A. Wilson Co., died recently at Riverview hospital, Red Bank, N. J. He was 73.

Wilcolator makes thermostatic controls, the Wilson firm, metal products.

* * *

Clarence L. Van Derau, general works manager for the four factories of the Westinghouse Electric Appliance Divs. until his retirement last Sept. 1, died recently in Mansfield (Ohio) General Hospital after a lingering illness. He was 65.

Van Derau served 35 years with Westinghouse, beginning in September, 1922, as manager of the plating, polishing, and buffing departments of the Mansfield plant. Within a few months he was placed in charge of all finishing operations.

At the time of his retirement, his responsibility included all phases of the factory manufacturing processes at Westinghouse plants in Mansfield, Columbus, and Newark, Ohio, and East Springfield, Mass.

* * *

John L. Rehring, head of a Chattanooga, Tenn. air conditioning firm, died there recently. He was 53.

* * *

Pasquale Pulvino, 39, operator of Niagara Refrigeration Co., Rochester, N. Y., died Dec. 26. He was graduated from the State University Agricultural college at Alfred as a refrigeration engineer in 1942.

For Your Reprint Copy

"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning & Refrigeration News, 450 W. Fort, Detroit 26, Mich.
Only 25¢ each.

U.L. & A.S.M.E. WATER-COOLED CONDENSERS ¼ TON to 15 TONS and LIQUID RECEIVERS for EVERY REQUIREMENT

Write for our NEW Catalog

STANDARD REFRIGERATION CO.
332 S. Hoyne, Dept. C
Chicago 12, Ill.

FOR BOTH R-12 and R-22

Use only one water valve

Penn "All-Range" Water Valve Reduces Your Inventory

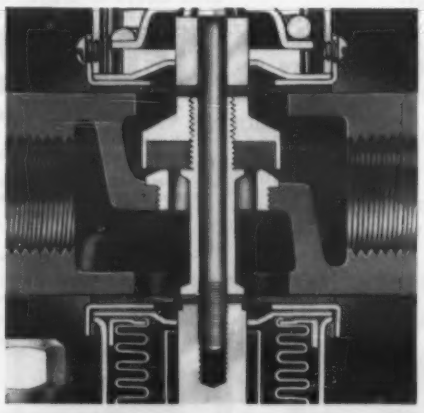
Easy to adjust with service wrench, not with fingers, thus tampering with adjustment by user is discouraged.

Now, cut your water valve inventory in half! Stock only one model . . . the new Penn 246 "All-Range" water valve . . . it's perfect for *both* R-12 and R-22 service.

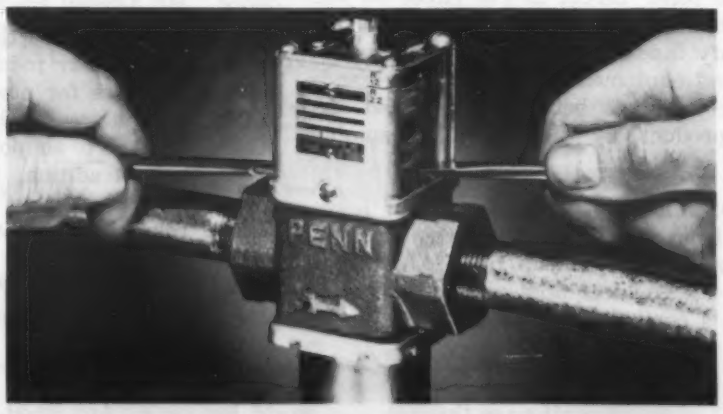
This new model has all the superior features of the Penn 246 . . . no valve chatter; no water hammer; no corrosion of sliding parts; easy manual flushing; highly sensitive yet accurate . . . all features which make it *stay on the job longer!* Available in ⅜", ½" and ¾" sizes.

Ask your wholesaler for Penn . . . the refrigeration industry's *favorite water valve.*

PENN CONTROLS, INC. Goshen, Indiana
EXPORT DIVISION: 27 E. 38th ST., NEW YORK, N.Y.



No rust, corrosion and sedimentation. Exclusive design keeps water away from bellows, range spring and sliding parts.



Easy manual flushing after installation . . . 2 screwdrivers, an upward lift and foreign matter is washed away to assure proper valve seating.

AUTOMATIC CONTROLS FOR HEATING, REFRIGERATION, AIR CONDITIONING, APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

For more information about products advertised on this page use Information Center, page 18.

They'll Do It Every Time

by Jimmy Hatlo

I'M THIRTY-EIGHT... IN THE BEST OF HEALTH... HAD A GOOD RECORD WITH MY OLD FIRM. THEY'VE GONE OUT OF BUSINESS. I HAVE GOOD REFERENCES.
SORRY! IT'S A RULE OF THE FIRM... WE NEVER HIRE ANYBODY OVER THIRTY— GOOD DAY!
PERSONNEL
HOWCUM DEPT. BILGEWATER BEVERAGE ONLY HIRES YOUNG BLOOD... THIRTY-FIVE IS MIDDLE AGE AS FAR AS THEY ARE CONCERNED...
BUT GET A SLOW-MOTION GANDER AT THE OLD WHISKERCHINS WHO RUN THE JOINT... NOT A ONE UNDER SEVENTY...
THANX AND A DOFF OF THE HATLO DOME-PIECE TO MRS FRANK L. NICKERSON, 8038 32ND AVE. N.W., SEATTLE 7, WASH.
GOOD AFTERNOON, GENTLEMEN (WHEEZE) ARE WE A QUORUM? (WHEEZE)
DIRECTORS ROOM
ANY OF YOU BOYS SEE MY SUNFLOWER SEED TONIC?
DANGED DRAFTY IN HERE!
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Realistic Pricing Is Our Greatest Need

OUR INDUSTRY must face the economic "facts of life" and receive "fair prices for its products," if it is to support the research and expansion essential to realizing its remarkable future potential, Mark W. Cresap, Jr., newly elected president of Westinghouse, insists.

The facts, he relates, are that "a very clear warning is signalled" by a 25 per cent decline in return on stockholder's equity over the last five years. He attributed this decline to being "caught in the vice of a severe cost-price squeeze."

As evidence of this squeeze, the Westinghouse executive pointed out that, using 1952 as a base of 100, "the steel industry received nine percentage points more price relief than did the electrical equipment industry."

In the consumer product field over the same period home equipment, which competes with the automobile industry for available consumer purchasing power, declined two per cent while automobiles increased 13 per cent pricewise.

"An inflation, not of our making, has pushed our costs up faster than our prices, with a consequent deterioration in the industry's earnings return.

"A continuation of this development poses two inescapable threats to our industry," he said, continuing:

"One is the effect on our ability to support the research and development effort that has been the keystone to our dynamic growth and our ability to serve the nation.

"The other threat is the effect on our ability to attract investment funds necessary to satisfy indefinitely the requirements for plant and equipment to meet the demands for more product, better product, and less costly product, by the general consuming public."

In explaining the significance of lower profits from which to finance research and development, Mr. Cresap pointed out that "in the electrical equipment industry these programs cost three times as much, in relationship to sales volume, than in industry as a whole.

"It is to the great credit of this industry that diminishing rates of profit have not reduced the magnitude of research and development activities—actually they have been expanded.

And it is the electrical equipment industry which has developed the home equipment which preserves food, washes and drys, cooks, informs and entertains, and does many other things (like providing air conditioned health for the entire family) which make the American people's life a better one . . .

"These accomplishments were not accidental, nor were they the result of the sheer size of the industry. They stemmed from costly research and development work conducted, not on a 'crash program' basis, but continuously since the inception of the business, year in and year out, in good years and bad, in peace and war, and both with and without government assistance.

"No industry in this economy can point to such a sustained, well-supported, and successful research and development tradition. It is the very core of the greatness of the business with which we are all associated."

This tradition is threatened, Mr. Cresap notes, because "during the past five years, the industry's retained earnings plus depreciation have failed to equal capital expenditures, by a considerable amount."

Pointing out that "any business or industry must be attractive to equity investors if it is going to face the future with confidence," Mr. Cresap asserted:

"We cannot assure the long-term health of the body of our industry unless we receive fair prices for our products— prices which permit reasonable profits—profits which enable us to support our research and development tradition, to generate funds for physical expansion and improvement, and to remain attractive to the investing public."

Well, that's what we've been telling the people in our business for quite awhile.

I shall pass through this world but once. Any good, therefore, that I can do or any kindness that I can show to any human being let me do it now. Let me not defer it or neglect it for I shall not pass this way again.—A Quaker Prayer.

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AIR CONDITIONING & REFRIGERATION NEWS

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F. M. COCKRELL, *Founder*

'The Conscience of the Industry'

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"I have always felt that whatever the Divine Providence permitted to occur I was not too proud to report. The people are not served by pussyfooting, or by that sort of journalism in which nobody will ask who is the editor of a paper or the writer of an article, and nobody will care."—*Charles A. Dana.*

ARTICLE PROVIDES 'SELLING AMMUNITION'

Better Living Co.
Jackson, Miss.

Editor.

The article "The Economics of Air Conditioning," furnishes real selling ammunition. I would like to secure additional copies if they are available.

The "News" is a clearing house for much valuable information.

JOHN BRUNO, JR.

FINDS NEWS READABLE, TIMELY, INFORMATIVE

Chicago, Illinois

Editor:

I am a solid booster of the AIR CONDITIONING & REFRIGERATION NEWS and I have over 100 articles which I have clipped out for reference purposes. I feel very strongly that your publication offers excellent coverage to our industry . . . it is very readable, timely, and informative. (This comment is long overdue from me, but better late than never.)

My wife and I will be in Detroit this spring to visit my folks (I was born and raised in Detroit and my family still lives there) and I will be looking forward to meeting you personally at that time.

BOB ANDERSON

READER WONDERS IF HONESTY WILL RETURN

Engsbergs, Inc.
Lake Mills, Wisconsin

Editor:

Thanks for the article "Butting in and Butting Heads." What started it? Greed or overproduction. Do you think we will get back to an honest way of pricing again?

G. C. ENGSBERG

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To See the Industry In Action EVERY WEEK

Keep up-to-date on what's going on in your industry. You'll see action weekly in AIR CONDITIONING & REFRIGERATION NEWS. Covers latest news and gives you top how-to-do-it reports on commercial and residential air conditioning, heating, commercial and home refrigeration: manufacturing, contracting, distributing, retailing, and servicing. Read the Industry's newspaper for profit every week. Only $6.00 per year, 52 issues (U.S. and Canada). Foreign: $10.00 per year.

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IMPORTANT: Company's Type of Business.....

Now Representing...

Betz Div., Bohn Aluminum & Brass Corp.—PHILIP T. MINER, Dallas, has been named representative in Texas and Oklahoma. He has been active in air conditioning and refrigeration for many years.

Fedders-Quigan Corp. — PIRMACS DISTRIBUTORS, Buffalo, has been franchised to distribute the room air conditioner and dehumidifier lines in Allegany, Cattaraugus, Chautauqua, Erie, Orleans, Genesee, Niagara, and Wyoming counties of New York.

Trane Co.—RAYMOND DIEHL CO., Tallahassee, Fla. has been appointed packaged air conditioning equipment outlet for both sale and installation.

McQuay, Inc. — Newly-formed CASE-ORIANS CO., Detroit, has been named representative for heating and air conditioning products in eastern Michigan.

McIntire Co.—Appointment of three sales representatives for driers, filters, strainers, and accessories has been announced. RAY HOCTOR will cover Mississippi, Louisiana, Arkansas, and western Tennessee from Memphis. KINDRED ENGINEERING CO., Dallas, will have two men covering Texas and Oklahoma. ART JOHNSTON, Portland, Ore. will cover Oregon, Washington, Montana, Utah, Alberta, and British Columbia, Can.

S. & R. Soda Fountain Mfg. Co., Inc.—ELLIOTT HOROWITZ, New York City, will cover the metropolitan area for this firm.

Recold Corp.—PALMER SUPPLY CO., Tulsa, Okla., has been appointed distributor of commercial refrigeration products. The firm will more than double its physical facilities.

Tube Manifold Corp.—Appointment of FRANK MAY as factory representative specializing in "TMC" molecular sieve filter-driers has been announced. Located in St. Louis, May will cover the wholesale, retail, and contract trade in that area.

Drayer-Hansen, Div. of National-U. S. Radiator Corp.—Naming of GEO. R. MELLEMA CO., Minneapolis, as air conditioning sales representative in Minnesota has been announced. ASSOCIATED REFRIGERATION PRODUCTS will continue as sales agent for refrigeration equipment in the area. DON R. GROTH, Oklahoma City, will represent the complete D-H line in Oklahoma. Now representing the firm in Nebraska and the lower half of South Dakota is the RAY GOODWIN CO., Omaha.

Alco Valve Co.—Appointment of GLEE R. STOCKER & ASSOCIATES to handle advertising and public relations has been announced.

Sturtevant Div., Westinghouse Electric Corp.—A-C SUPPLY CO., Philadelphia, has been named distributor of industrial fans, ventilating sets, steam, hot water, and gas-fired unit heaters in the eastern half of Pennsylvania and most of Delaware and New Jersey. Appointment of McNAMARA SALES CO., St. Paul, as sales agent for the division's general line was also announced. The firm will cover North and South Dakota, Minnesota, and northwest Wisconsin.

Punxsutawney Co.—RAYMOND W. SENECHAL has been named representative to handle "Beverage-Air" cooler sales throughout New England.

Mathes Co., Inc.—UNITED REFRIGERATION CO., Columbus, Ohio, will be wholesale distributor for all central Ohio counties.

Permaglas Div., A. O. Smith Corp.—WARREN DISTRIBUTING CO., Houston, Texas, has been named Gulf Coast distributor for central heating units, air conditioners, and hot water heaters.

Trion, Inc.—H. E. RIECKELMAN CO., Buffalo, TENNITY & CO., Los Angeles, and ROBERT S. BELCHER, Tampa, Fla., have been appointed commercial and industrial representatives.

J. F. Pritchard & Co. of California—This division of J. F. Pritchard & Co. has named H. R. LEMAY & CO., INC., sales representative for south Texas and southwest Louisiana. WM. B. WICKERSHAM & CO., West Newton, Mass., was appointed sales representative for Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont. MacDONALD PROCESS EQUIPMENT, LTD., Toronto, Ont., Can., has been named to cover the province of Ontario.

Utility Appliance Corp.—Appointment of DOUGLAS HOTES as Los Angeles area representative for the firm and its Gaffers & Sattler contract division was announced.

Port Morris Machine & Tool Works, Inc. — Appointment of HOWARD I. STRUM as factory representative for "Electro Freeze" equipment in the California area was announced.

Farr Co. (Los Angeles) — This firm has increased the field engineering service for air filters by adding four representatives. EARL W. SIEBERT will serve the northern Florida and southern Georgia territory, ROBERT S. BELCHER central Florida, BROWNLEE-MORROW CO. Alabama, and G. H. AVERY CO. Arkansas.

Wilson Mfg. Co. (Memphis)—MADDEN BRASS PRODUCTS CO. has been named national distributor of the "Wimco" line of tube working tools.

Gibson Refrigerator Co., Div. of Hupp Corp. — Appointment of SPEED QUEEN ATLANTIC CO., INC., Long Island City, N. Y., as refrigerator, freezer, and range distributor was announced. W. R. LIGHT CO., INC. will continue to handle Gibson air conditioners in the New York metropolitan area. RIDGE CO., South Bend, Ind., and PEERLESS ELECTRIC SUPPLY CO., Indianapolis, have been appointed distributors for Gibson appliances in their areas. Other new distributors include: MIDWEST MOTOR PARTS, INC., Wichita, Kan.; H. A. McRAE & CO., INC., Troy, N. Y.; and P. J. MORAHAN CO., Philadelphia. Morahan was formerly district sales manager for Gibson in that area.

O. A. Sutton Corp.—Appointment of Spartan Engineering Co., Chicago, as manufacturer's representative for "Sutco" motors has been announced.

HI-DRI THE LOWEST PRICED ALL-BRASS DRYER BEATS ALL COMPETITION

- All Brass Shell and Fittings.
- 100% Guarantee.
- Individually Boxed.
- Rated Under ARI Standard 710.
- Filled with Davison's PA-400 Silica Gel.
- All Solder Connections made with Easy-Flo 45 Silver Solder.
- Extra Large Hexes.
- U. L. Approved.

ALSO AVAILABLE WITH YOUR PRIVATE BRAND LABEL.
FOR INFORMATION AND PRICES CONTACT
WABASH CORPORATION 2300 S. WESTERN AVE. CHICAGO 8, ILL.

Air Conditioning, Ordering, Installing,
Maintaining – Now Made Easier For You . . .

SATISFABRICATED by GOVERNAIR SCU

Yes! SATISFABRICATED! ©

It's our way of telling the world that Governair Products are guaranteed to satisfy the widest range, the most exacting capacities, and the most truly unusual space requirements.

Governair offers a SPECIAL saving of time and trouble with its complete line of Self-Contained Units. They're easier to order, since you specify only one unit in place of picking several components. Easier to install, too, since they are delivered fully tested and ready to operate with simple electrical, water and duct connections.

Best of all, Governair's quality engineering and construction assure you of lower cost maintenance so important to the purchaser.

WRITE OR CALL FOR DETAILED INFORMATION.

GOVERNAIR CORPORATION
4840 NORTH SEWELL
OKLAHOMA CITY, OKLA.

GOVERNAIR

Enters Beverage Wallcase Field

KEY NO. H-120

MILWAUKEE — Aug. G. Barkow Mfg. Co., Inc. has entered the field of manufacturing beverage wallcases. These are equipped with stainless steel sliding doors and thermo-pane glass. Wire shelves make bottled goods easily accessible, the firm said.

Forced draft evaporator section has condensate drain, is a feature of Barkow's wallcase which is made only in the 25-cu. ft. size at the present time.

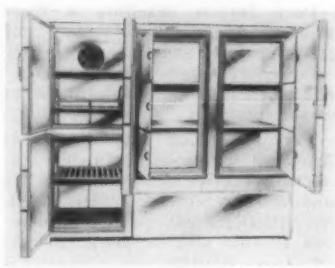
Nylon Clamps Come In 6 Sizes

KEY NO. H-121

SYCAMORE, Ill.—Six new sizes of nylon clamps have been announced by Holub Industries, Inc.

These clamps are precision molded by the injection process from du Pont nylon FM-10001. They have a temperature range of 60° below zero to 250° F. and will not support combustion.

According to the manufacturer, these clamps are extremely strong and tough; and hold their shape even under severe stress. They are inert to fungicidal attack, easily withstand changes in atmospheric conditions and resist corrosion or sweating. The manufacturer also states that they remain stable when exposed to mild acids.



Refrigerator Has More Freezer Space

KEY NO. H-122

HUDSON, N. Y.—Foster Refrigerator Corp. has announced the addition of a new two-temperature refrigerator (model HLR 35-25-U) designed for greater freezer storage space.

This new refrigerator was designed to meet the need of the modern trend toward the use of more and more frozen foods. New model features a 35-cu. ft. freezer section and a 25-cu. ft. refrigerator section.

Introduces Self-Contained Milk Shake Freezer

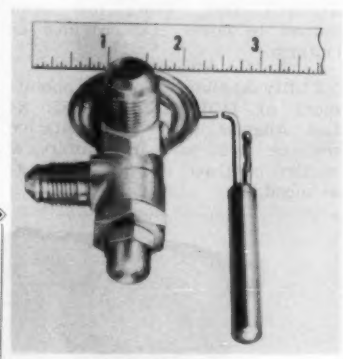
KEY NO. H-123

NEW YORK CITY—A new milk shake freezer, model TS-5, has been introduced by Emery Thompson Machine & Supply Co.

It has a self-contained 1-hp., water-cooled compressor, ¾-hp. agitator motor, and is capable of producing shakes continuously every eight seconds, the firm claims.

A mixer adjacent to the draw-off gate can be used to mix flavor as the product is being drawn or separately at the user's option. The mix is held in a refrigerated 6-gal. hopper.

Expansion Valve Permits Broader Use



KEY NO. H-124

DETROIT—A compact expansion valve said to provide great capacity has been offered by Detroit Controls, Div. of American-Standard.

The smaller size, 2 3/16 in. minimum height, and ½ to 5 tons capacity, permits broader use, the firm said. Indentified as no. 718 it has a removable power element and the valve can be easily and completely disassembled for inspection and cleaning in the field.

A companion valve, of the same capacity and basic design, no. 717, is suitable for general field replacement. This is a factory set valve, yet the superheat setting is easily adjusted in the field before installation, with an Allen wrench through the inlet connection. This allows superheat settings other than standard. The adjusting screw is not sealed or soldered.

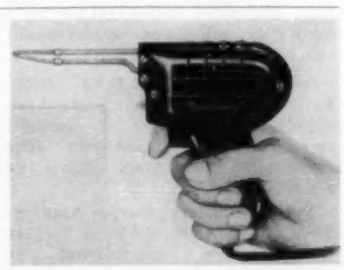
Pressure Control Is for Hazardous Locations

KEY NO. H-125

WN rel 12-3-57 NO PIX— TMc

WATERTOWN, Mass.—A new explosion-proof pressure control, type H95, a calibrated unit, is designed to provide accurate and reliable pressure control in hazardous locations where explosive vapors or gases are present, according to the manufacturer, United Electric Controls Co.

H95 pressure settings are easily made with an external adjustment knob and calibrated dial. Models are available with adjustable range spans.



Offers Soldering Gun

KEY NO. H-126

CHICAGO — The new 100-watt "Quick-Hot" electronic soldering gun has been offered by Wen Products, Inc.

National-U.S.

F L E X A Z O N E

Central Station Air Conditioner for Commercial and Industrial COOLING & HEATING

Write for full information to Marketing & Promotional Dept.

A-6-e

National-U.S. Radiator CORPORATION

HEATING AND AIR CONDITIONING DIVISION Johnstown, Pennsylvania

New Flexazone Air Conditioning by National-U.S. offers

Central Station Cooling and Heating for Commercial Buildings

A unique new air conditioning unit was introduced by NATIONAL-U. S. RADIATOR CORPORATION at the ARI show in Chicago last November. Called the NATIONAL-U.S. *Flexazone CENtral Station Air Conditioner, Model CEN-FZ,* it has the unusual feature of supplying *cooling and heating to different sections of a building simultaneously*. The cooling cycle is an integral part of the unit.

Temperature zoning, an air conditioning requirement for modern commercial and industrial buildings, is available to architects and engineers in the CENtral Station *Flexazone*. These units are a completely packaged assembly, ranging in size from 7½ through 60 HP of cooling capacity. Units are completely wired and piped and include compressors, condensers, (water-cooled or evaporative), blowers and motors, heating and cooling coils and *Flexazone* dampers.

SELECTIVE COOLING AND HEATING

Many public buildings require simultaneous heating and cooling in different areas. A hotel lobby, for example, may need considerable heat on a cold day while at the same time a dining room or meeting room requires cooling. The florist's shop, drug store, central offices and coffee shop in the same hotel would probably all require different degrees of heating or cooling, depending on the amount of traffic, the window exposure, the time of day, weather conditions, etc. With the NATIONAL-U.S. *Flexazone,* all these requirements can be satisfied from the single unit.

What applies to the hotel is certainly just as true for department stores, shopping centers, school buildings, factories and institutions. A single *Flexazone* can distribute the proper amount of air at the selected temperature through ducts to many zones or areas, simultaneously. Each area can be held at its desired temperature level with its own individual thermostat.

VERSATILE INSTALLATION

Space limitations are almost invariably a problem for the heating and air conditioning engineer or architect, whether the equipment is for a new building or an existing structure. Because of this, NATIONAL-U.S. engineers have designed the CENtral Station *Flexazone* for installation flexibility under almost any construction limitations.

ONE COMPACT UNIT

The convenience of having a *Flexazone* air conditioner for heating and cooling is an advantage to everyone concerned with modern building construction. In addition, factory assembly and testing *before installation* assures trouble-free performance on the site. Operating controls and safety devices are pre-assembled and pretested to eliminate costly improvisation and revision after the unit is installed. And experience-proven NATIONAL-U.S. components and assemblies are used throughout the construction of the *Flexazone* to assure the highest standards of quality.

CENtral Station Flexazone Unit with Evaporative Condenser.

ENGINEERING DATA AVAILABLE

Full engineering data on the NATIONAL-U.S. *Flexazone CENtral Station Air Conditioner, Model CEN-FZ,* have been assembled in bulletins describing its performance, physical layout, dimensions and components. These bulletins can be obtained on request from Marketing and Promotional Department, Heating and Air Conditioning Division, NATIONAL-U. S. RADIATOR CORPORATION, Johnstown, Pennsylvania.

Information Center

For *more information* on What's New products, current literature and catalogs available, equipment advertised in AIR CONDITIONING & REFRIGERATION NEWS use Key Numbers where designated or specify products advertised and we'll see that you receive this information promptly.

Products Advertised
(list name, page, and issue date)

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What's New or Current Literature Available

Key No. . . . . Key No. . . . . .

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Key No. . . . . Key No. . . . . .

Name . . . . . Title . . . . . .
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Company . . . . . .

Street . . . . . .

City . . . . . Zone . . . . State . . . . . .

Type of Business . . . . . .

MAIL THIS FORM TO

AIR CONDITIONING & REFRIGERATION NEWS

Readers Service Dept.

450 W. FORT ST. DETROIT 26, MICHIGAN

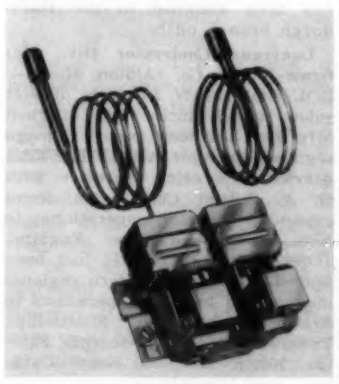
For more information about products advertised on this page use Information Center, page 18.

Silencer Prevents Return Air Noise

——KEY NO. H-127——

NEW YORK CITY—A silencer, designed to prevent transmission of noise through return air vents without impeding air passage, was recently introduced by the Air Conditioning Dept., Industrial Acoustics Co., Inc.

Called "Quiet-Vent," this silencing unit features functional construction designed to fit snugly inside normal walls, providing an inconspicuous appearance. Its unified one-piece design makes handling and installation easy and simple, the firm stated.



Home Cooling Controls Added

——KEY NO. H-128——

MINNEAPOLIS — A complete new line of residential air conditioning controls has been introduced by Minneapolis-Honeywell Regulator Co.

Included were a refrigeration pressure control and a series of air conditioning control panels.

The new refrigeration pressure control has been specially designed to mount in a minimum of space, making it suitable for use in control panels. Available as dual or separate high and low pressure devices, the pressure controls can be used as individual units or as components in control panels.

Newly-introduced air conditioning control panels include types for both remote condensing sections and self-contained units. The condensing section panels are especially designed for use with Honeywell evaporator sequencing panels.

Announces Flaring Tool and Drill

——KEY NO. H-129——

HIALEAH, Fla.—Watsco, Inc. recently announced part no. P-10, combination flaring tool and drill guide.

This tool enables you to make precision flares on all tubing in sizes from 3/16 to 5/8 in. and features a built-in V-drill guide as well.

To use—simply place the "V" portion of the tool over the part of the tube you want drilled. Insert drill in the opening provided. The hole is drilled with ease, accuracy, and safety.

Cabinet Air Conditioner Offers By-Pass Capacity Control

——KEY NO. H-1210——

PHILADELPHIA—John J. Nesbitt Co. has introduced the Nesbitt "Roommate"—a completely new cabinet air conditioning unit.

This new cabinet heating/cooling unit has been especially designed for installations that require attractive appearance, quiet operation, and high capacity performance, the company said.

Roommate offers by-pass capacity control and air volume stabilizers. In the five largest units, by-pass capacity control provides closer summer humidity control and lowers pumping requirements. On all Roommates with outdoor air openings, air volume stabilizers are available.

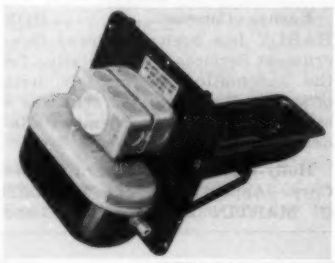
New Roommate will be made in seven basic sizes providing cooling capacities from 17,500 to 111,000 B.t.u.h. This compact unit can be floor, wall, or ceiling mounted with a selection of non-recessed, semi-recessed, fully-recessed, universal, or built-in arrangements.

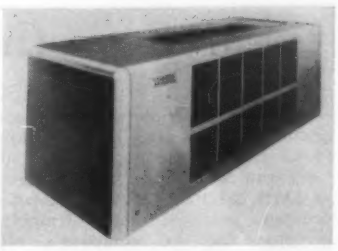
Automatic Electric Humidifier Can Be Installed Easily

——KEY NO. H-1211——

MILFORD, Mich.—A new automatically controlled electric humidifier with manual setting, has been introduced by Skuttle Mfg. Co. It can be easily installed in all types of warm air heating and year-round air conditioning systems.

Known as model 800-T "Humi-Dial" for trunk line installation, the new unit is said to offer many advantages over conventional type humidifiers. The electrical operation is completely separate from the heating and air conditioning system so that it continues to serve whether the main unit is in operation or not. Should the water supply fail for any reason, the specially designed electric element will continue to operate without causing damage to the humidifier, it is claimed.





High-Pressure Room Units Produced

——KEY NO. H-1212——

LA CROSSE, Wis.—Four new small-size, high pressure induction room air conditioners for use in multi-story buildings have been added to Trane Co. lines.

A low 12-in. vertical cabinet unit for installation beneath low sills and picture windows, a 12-in. vertical unit for concealed installation at the floor level, a 10-in. deep horizontal cabinet model for ceiling installation, and a 10-in. horizontal unit for concealed installation are included.

where PRECISION IS A PRECIOUS COMMODITY

EXTRA WORKABILITY

The proper kind of temper is vital in tube used for refrigeration and air conditioning purposes. VIKING Copper Tube has been produced with the best available annealing and tempering equipment, thus assuring perfect fabricating.

ABSOLUTE, UNVARYING STRAIGHTNESS

A battery of straightening machines keeps VIKING Copper Tube absolutely, unvaryingly straight. In addition, these machines precisely temper the tube, imparting to it the correct surface hardness . . . assuring ease in fabrication resulting in substantial savings in time and labor.

ELECTRONIC QUALITY CONTROL

An electronic "Brain" detects the minutest flaw or imperfection in the walls of VIKING tubes . . . automatically discarding defective tubes. Trouble-free fabrication is virtually guaranteed — operational failures almost completely eliminated.

At VIKING, precision is a companion to production. The drawing tools used in the manufacture of VIKING Copper Tube are of scientific design based on the results of years of research and experience. They are made from the finest materials available to modern technology for the express purpose of drawing thin wall copper tube to fine tolerances.

These tools are made by experts to the most rigid specifications and with the same care and craftsmanship given to fine jewelry. They are then used in a carefully calculated series of operations designed to give the highest quality and degree of uniformity.

The techniques employed have made VIKING Copper Tube consistently superior in quality, fine tolerance and uniformity. As a result, more and more manufacturers of air conditioning and refrigeration units and coils are turning to VIKING as their principal source of supply for thin wall copper tube.

VIKING COPPER TUBE CO.
CLEVELAND 10, OHIO
PRECISION DRAWN SEAMLESS COPPER TUBE

Men on the Move . . .

Cory Corp.—DAVID EISENDRATH has been named vice president-manufacturing, a promotion from heading manufacturing of Cory and Nicro Divs. Appointment of JACK MATTESON to the newly-created post of sales training director for the company's air conditioning contract sales division was also announced. Matteson previously was associated with Hupp Corp. as assistant sales manager of Refrigeration Contract Div.

Dunham-Bush, Inc.—HENRY A. BOUDOLF, formerly with Air Temperature, Inc., Memphis, a sales engineer, has joined the St. Louis district office as a sales engineer.

O. A. Sutton Corp.—Appointment of JOSEPH MINARIK as branch manager for Vornado Distributing Co., Inc., Baltimore, has been announced. He was previously sales manager of Vornado Distributing Co., Inc., Philadelphia. He replaces WALTER APPLETON, resigned.

"Freon" Products Div., E. I. du Pont de Nemours & Co., Inc.—DR. DONOVAN E. KVALNES, technical manager, has assumed additional duties as the division's sales development manager replacing DR. EDMOND G. YOUNG who was named manager of development conferences in the Marketing Research Div. of the company's Development Dept. DR. FRANK W. BLODGETT, chemist, became technical assistant to Dr. Kvalnes. DR. FRED S. PALMER remains as technical assistant on sales development.

Ray Claxton Co. (Dallas)—CHARLES C. GRIMES, commercial and industrial controls specialist formerly with Minneapolis-Honeywell Regulator Co., has joined this mechanical contracting firm. He will concentrate on operations in the commercial air conditioning, process piping, and industrial sheet metal fields.

Robinair Mfg. Corp., Div. of Kent-Moore Organization, Inc. (Warren, Mich.)—Appointment of ROBERT BISHOP as sales manager and HAROLD TUBBS plant manager of the plant in Edgerton, Ohio, has been announced.

American Blower, Div. of American-Standard—GEORGE T. SONNTAG was named sales engineer in Salt Lake City. He has been with Ingersoll Rand in Detroit and the contract sales department of Kelvinator Div., American Motors Corp. JEFFREY R. SINGER has been named sales engineer for the Los Angeles office and ROY O. ROSE is the new sales engineer in the Tulsa, Okla. office. Both are graduates of the firm's sales engineer training program.

Barber-Colman Co. — ROY HARDY has been appointed Government Services representative for the Automatic Controls Div. with offices in Bethesda, Md. He was a sales engineer in the firm's Philadelphia office.

Holly-General Co., Div. of Siegler Corp.—Appointment of CHARLES C. MARTIN as advertising and sales promotion manager has been announced. He has had more than 20 years' experience in marketing, sales management, and advertising in heating, plumbing, and air conditioning.

Machinery & Systems Div., Carrier Corp.—THOMAS S. CAMPION was named San Francisco district office manager and will continue to have over-all responsibility for sales of marine air conditioning and refrigeration on the west coast. He has been with the firm 30 years. He replaces EARL G. CARRIER, resigned.

Delco Products Div., General Motors Corp. — VINCENT P. BLAIR was named general manager, taking over from FRANK H. IRELAN who is retiring.

American Air Filter Co., Inc.—FRANK K. PLATT, president of Air Engineering Co., Kalamazoo, Mich., has been named to the newly-created post of central regional manager for all of the firm's products. He is being succeeded at Air Engineering by L. B. MASON.

Frick Co. — LAWRENCE L. DIENER, an assistant engineer, has been assigned to the Pittsburgh branch office.

Lonergan Coolerator Div., McGraw-Edison Co. (Albion, Mich.)—LOU GOLDMAN, formerly district sales representative for Mitchell Mfg. Co., has been named Chicago regional manager. ARTHUR ETES, previously a sales executive with O. A. Sutton Corp., will direct expanded division operations in New York and New England. JOSEPH W. PATZSCH has been moved up to southeastern regional manager to head all operations in Arkansas, northern Mississippi, Tennessee, Alabama, Georgia, Florida, North Carolina, South Carolina, and Virginia.

Coleman Co., Inc.—CHARLES W. BARCHERS, Boston regional sales manager, has been transferred to Cleveland to establish a new sales office and warehouse.

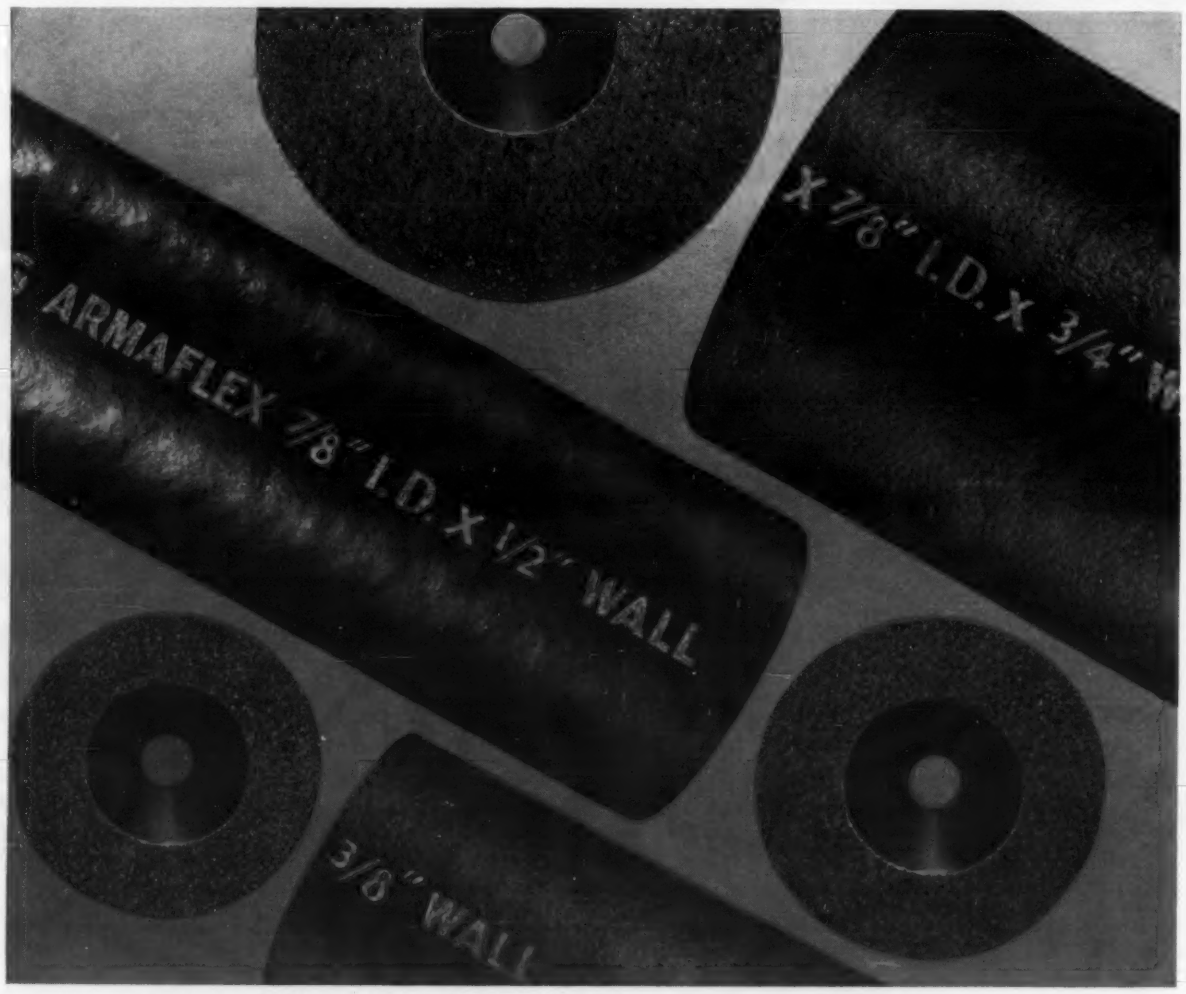
Warren Co., Inc.—EARL N. BARTON has been elected assistant vice president in charge of distributor sales. He continues as advertising director. MICHAEL T. DALY was named vice president in charge of the Chain-Stores Div., L. S. VENABLE secretary and assistant treasurer, and THERON E. SCARBROUGH was elected treasurer and assistant secretary.

Solar Permanent Co., Div. of U. S. Industries, Inc. (Tomahawk, Wis.)—GORDON R. STOUT has been appointed a district sales manager for "MilkMinder" bulk milk tank sales. He was associated with Stout Farm Supply Co.

American Potash & Chemical Corp.—JOHN L. ANDERSON has been appointed Chicago office manager. He joined the firm recently after serving as vice president-sales for George C. Peterson Co. EDWARD C. O'CONNOR, sales representative, and WALLACE O'DOWD, formerly with Spencer Chemical Co., have been named sales representatives with the new office.

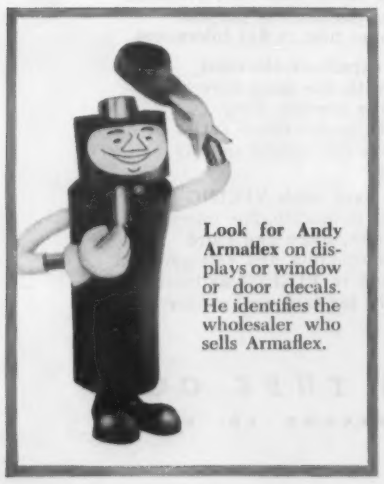
Basic B9.1 Becomes N. Y. Refrigeration Code

MAYOR Robert Wagner of New York City hands S. Arnold Witte, counsel to Governmental Affairs Dept., Commerce and Industry Association of New York, the newly-enacted city refrigeration code he has signed into law. Behind the mayor are Lester E. Kelley, supervising engineer, Galbreath Corp., vice chairman of CIA's Air Conditioning and Refrigeration committee; R. L. Williams, manager, refrigeration sales, E. I. du Pont de Nemours & Co., Inc., chairman of the same committee; and Henry G. Strong, executive secretary of RISAC.



Complete new Armaflex line includes ⅜", ½", and ¾" nominal wall thicknesses. Sizes range up to 3" IPS. For larger piping, Armaflex sheets are used.

Now—3 thicknesses of Armaflex pipe covering to stop condensation down to zero



Look for Andy Armaflex on displays or window or door decals. He identifies the wholesaler who sells Armaflex.

Now Armstrong Armaflex® comes in three wall thicknesses – ⅜", ½", and the new ¾". With this greater thickness, you can apply the economical amount* of insulation to stop condensation on lines operating all the way down to zero. Armaflex is a highly efficient, flexible, foamed plastic material with a k factor of .28 at 75° F. mean temperature. Its closed cell structure is impervious to air or vapor penetration.

A big advantage of this flexible insulation is the speed with which it can be applied. Labor costs drop as much as 50%, compared to costs of applying more conventional insulations to pipes and fittings. Armaflex can be slipped over piping before connections are made, or slit and snapped on. Joints are sealed with 520 Adhesive. Fittings are easily and quickly insulated.

* Recommended Armaflex thicknesses for various service conditions are contained in free descriptive booklet. For your copy, write today to Armstrong Cork Company, 2201 Parsons Street, Lancaster, Pennsylvania.

Armstrong INSULATIONS

Looking for a Business to Buy . . . ?

Check the Business Opportunities Section in the classified advertising columns.

For more information about products advertised on this page use Information Center, page 18.

Westinghouse Room Units--

(Concluded from Page 1)

Westinghouse room air conditioner department, said the air conditioner line is more flexible and carries more features than any previously introduced by the company. He said list prices will be suggested in each market by Westinghouse distributors and "there will be no national suggested list price."

'Power-Sweep' Cooling

The wall-to-wall cooling is accomplished by a feature called "Power Sweep," Paulson pointed out. It consists of oscillating directional louvers behind the grille which sweep back and forth in a vertical plane. Thus, the cool air is distributed evenly across the entire room rather than being restricted to specific channels, he stated.

Will Heat Room from 0°

Models equipped with the reverse cycle heat pump also have heating elements, Paulson said. He claimed the new Westinghouse units will heat a room to the thermostat setting even when the outdoor temperature is zero.

The Westinghouse portable, called the "Mobilaire," is a 1-hp. "plug-in" unit that operates on normal household current, the announcement stated.

"With its accessory cart, it can be moved from room to room easily and installed in seconds," the company said. "It comes with an adjustable frame that fits in any window up to 40 in. wide. Equipped with a platform that can be raised or lowered, the cart enables the user to slide the air conditioner quickly and easily into place.

Circulates 200 Cu. Ft. Of Air Per Minute

"The Mobilaire circulates 200 cu. ft. of cooled air per minute with its fan at high speed and 165 cu. ft. at the low setting. Like all Westinghouse air conditioners, the unit also functions as a dehumidifier removing more than 1½ pints of moisture per hour from the air."

Two other series — the "Streamliner" and the "Super" — and a special casement model complete the 1958 Westinghouse line.

The Streamliner series consists of six models, designed for through-the-wall or window installation.

"Smartly styled, they are but 27 in. wide, 16 deep, and 17 high with neutral sandalwood color schemes," it was explained. "Each model has four directional grilles permitting wall-to-wall cooling. Four of the six models operate on 115-volt (regular household) current and two on 230-volt.

"The six models in the Super series feature the adjustable, draft-free grilles, Fiberglas filters, single dial control, quiet operation, and air circulation ranging from 240 to 475 c.f.m. Two models operate on regular household current and the balance on 230-volt lines. A 2-hp. model in this series cools up to three rooms.

'Provides Added Flexibility'

"While all models can be adapted to casemental installation, the special Casement model in the Westinghouse line provides additional flexibility. It can be mounted part-in, part-out, or completely inside any standard width casement or double-hung window. It features pushbutton controls for five comfort zones including cooling, circulating, and fresh air.

"All models feature the new Westinghouse 'Perma-Cold' thermostat."

R.S. Sheetz, manager of the Westinghouse water cooler and dehumidifier departments, said the humidistat featured on the Custom model dehumidifiers "starts the dehumidifier automatically when humidity rises, and stops it when the degree of dryness desired is reached."

Both the Custom and Deluxe models have been completely restyled by Westinghouse in the '58 line, Sheetz said. The Custom's powder blue cabinet with gold trim grille "makes it an attractive addition in any setting," while the new Deluxe model's soft sandlewood finish "blends anywhere," it was pointed out.

10-Qt. Container Set Out-of-Sight

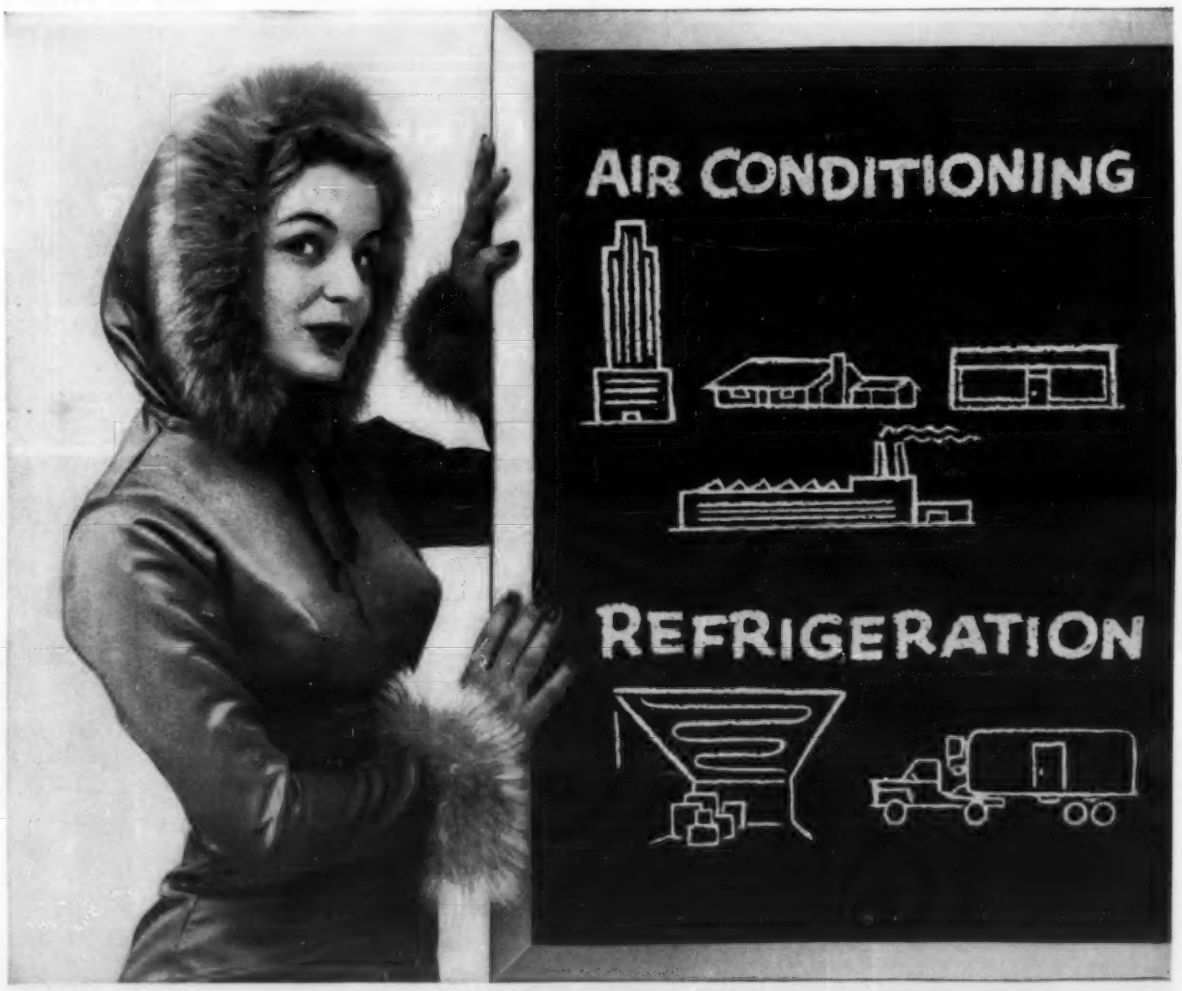
The Custom contains a built-in out-of-sight 10-qt. polyethylene container and the Deluxe model is equipped with a length of hose for automatic drain-off of excess moisture from the air. Both models are mounted on casters for mobility, and operate on 115-volt, 60-cycle a.c.

"The Westinghouse Custom dehumidifier costs no more to operate than a 200-watt bulb," Sheetz said, "and yet removes as much as 31 pints of moisture within a 24-hour period and is designed to keep the air dry in an enclosed area of up to 1,300 cu. ft.

Westinghouse prices are suggested by the company's wholesale distributors in each trading area and the price on the new Deluxe is the lowest ever offered by Westinghouse, he said.

MOBILE cart permits 1958 Westinghouse portable room air conditioner to be adjusted to window level. Room unit then slides into adjustable window frame. Called "Mobilaire," unit operates on regular house current, functions as a dehumidifier.

WALL-TO-WALL cooling is achieved in '58 Westinghouse "Custom Supreme" room air conditioner with silently oscillating louvers that sweep back and forth 12 times a minute. Operated through wall or window, unit also has a heat pump to warm a room, filters room air, and exhausts warm air outside.



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Free Inspection To Be Feature Of May Heating-Cooling Campaign

CHICAGO—A free inspection or check-up of home plumbing and heating installations will be the basis of the industry's bid for a rush of new business in May, the third annual Plumbing-Heating-Cooling Month.

This and other decisions in planning for the intensive selling period were reached at a meeting of the Advertising and Sales Promotion Council of the Plumbing - Heating - Cooling Information Bureau.

"The free survey of home plumbing and heating is expected to uncover numerous leads for the contractors in selling the highly-profitable remodeling and modernization market," it was stated.

There will be two checklists for the survey—one, in the form of a self-quiz on plumbing and heating, will go to homeowners; the other, a more technical form prepared with the assistance of the National Association of Mechanical Contractors Association of America, will be for use by contractors in conducting inspections.

The slogan for the May promotion again will be the familiar "Renew the Heart of Your Home—Check Plumbing-Heating-Cooling." Certain limitations in this slogan for a year-round program of industry promotion were recognized by the Council. As a result, a new slogan keynoting the broad objectives of industry-wide cooperative effort will be sought, probably through some kind of contest.

The timetable drafted by the Council called for a general announcement Jan. 10 alerting manufacturers, all industry associations, and 130 local-level committees to the month of May promotion.

Also on Jan. 10 there was to have been a meeting of the Trade Publicity Council to present a full campaign to editors of industry publications.

By Feb. 1 artwork is to be ready so that manufacturers can tie in there own advertising and sales promotion with the May campaign. Plans for conducting April Rallies for May will be mailed to the 130 local committee chairmen Feb. 15, as well as manufacturers and all industry associations.

March 15 is the date for availability of various sales helps for contractors, both those prepared by individual manufacturers and the Plumbing-Heating - Cooling Information Bureau.

Supporting material to be supplied by the Bureau includes a procedure manual for contractors, explaining how to conduct a successful May promotion; checklists to be used in the free survey offer; a streamer for display in store windows or on service trucks; and three envelope stuffers, one on plumbing modernizing, one on heating modernizing, and a third on time payment financing. There will also be buttons that can be worn by office personnel and journeymen during Plumbing-Heating-Cooling Month.

Forced Vs. Radiant Debate Ends In Tie

LOS ANGELES—The debate on "heating and cooling comfort —radiant vs. forced air," was declared a draw at the November dinner meeting of Institute of Heating & Air Conditioning Industries.

Agreed upon was a need for more engineering efficiency on both types before installation, as well as importance of better selling, and more intelligent selling to the buyers of com-

Talking for forced air on the IHACI debate team were: Art Horn, National sales manager for Day & Night Mfg. Co.; Don Will, president of Southland Heating & Air Conditioning, Inc., Long Beach; and William L. Kell, regional manager in southern California for Tuck-Aire Furnace Co., who substituted for James F. Deane, Tuck-Aire vice president.

Debate team for recently formed Radiant Heating & Cooling Institute of Southern California was: A. Quincy Jones of West Los Angeles, member of Jones & Emmons, architect; Tom Parry, mechanical engineer of Pasadena; and L. C. Bishop of Year-round Comfort, Inc., Los Angeles.

Food Warehouse To Get 13 Dravo Space Heaters

PITTSBURGH — Dravo Corp. announced that it has received an order from Loblaws, Inc., for 13 oil-fired induced draft "Counterflo" space heaters to be installed in the company's food warehouse at Buffalo, N. Y.

The order consists of six 1,250,000 B.t.u./hr. units and seven 1,000,000 B.t.u./hr. units with a total air output capacity of 181,400 c.f.m.

Feature of the heaters is Dravo's new "Pyrojet" burner employing a dual pre-heating system for the burning of No. 4 and No. 5 oil.

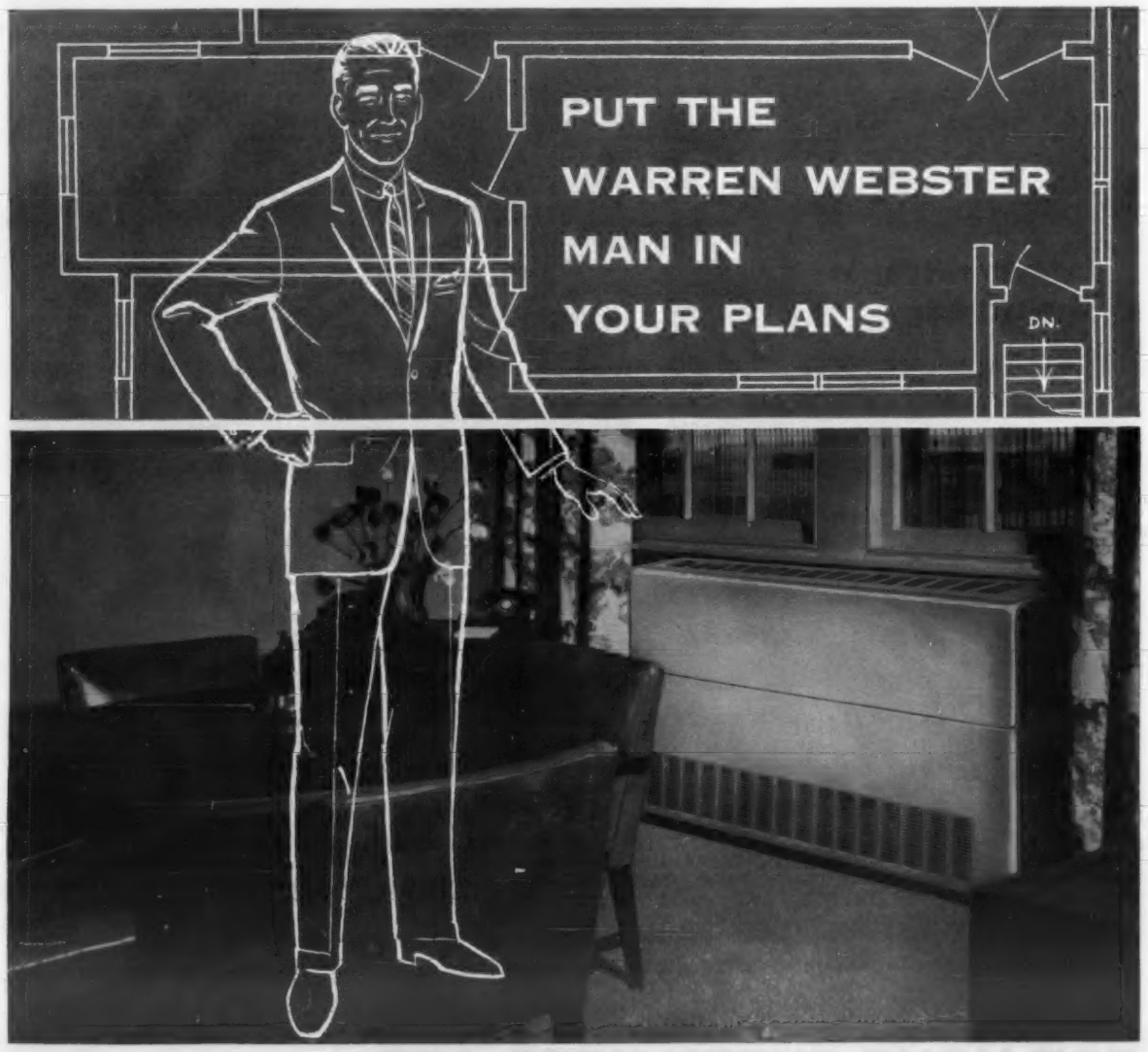
Michigan Heating Men To Meet In Grand Rapids

DETROIT — The Michigan Heating & Sheet Metal Association will hold its annual convention at the Pantlind hotel, Grand Rapids, on Feb. 20 and 21, Jay Biddle, executive secretary, announced recently.

Round table discussions of current interest topics will dominate the sessions, he said.

Association's board of directors will meet on the 19th and auxiliary banquet will be held on the evening of the 20th, he added.

Anyone in the heating industry is invited to attend, he declared.



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For complete details on this exciting new line of Webster Cabinet Heaters — and the all-new matching Deluxe Series Cabinet Air Conditioners — see your Warren Webster Man, or write for Bulletins B-1740 and B-1750. Warren Webster & Company, Camden 5, New Jersey. Since 1888. Offices in principal U.S. cities and Canada.

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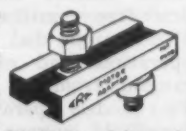

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For more information about products advertised on this page use Information Center, page 18.

New Facilities House Westinghouse Training School

EQUIPMENT workshop at new Westinghouse training school allows students to gain actual experience while learning Westinghouse products.

STAUNTON, Va. — The Air Conditioning Div. of Westinghouse Electric Corp. recently held the first session of its factory conducted product training program in brand new facilities created specifically for training.

The courses have been designed to train Westinghouse distributor service personnel on all the important aspects of product knowledge such as installation and maintenance.

"Students from franchised Westighouse customers are eligible to attend either the packaged products course or the larger applied equipment course, or both in the case of a full line distributor," it was explained. "Each course is for a duration of one week.

"The new facilities at Staunton include a class room which has available projection equipment and visual aids.

"A service workshop adjoins the class area where representative models of all packaged cooling and heating products are installed and operating. Here the service personnel can duplicate actual field installations, pull compressors, service valves, and in general cover every important phase of product knowledge. Electrical and water facilities are also available."

The program is under the direction of Carl Cannon, director of training for the Westinghouse Air Conditioning Div. Cannon advises this program is continuous through March and that applications for enrollment have been so heavy that additional classes may be scheduled beyond that date.

Let MEIER Props Help YOU keep mounting Production Costs in Line

If you manufacture products involving air movement, chances are MEIER can help cut *your* increasing production costs.

After all, we've been in the fan blade business a long, long time. And, down through the years, we've accumulated quite a collection of standard parts which offer thousands and thousands of combinations which may be applicable to your needs. And, at less cost to you!

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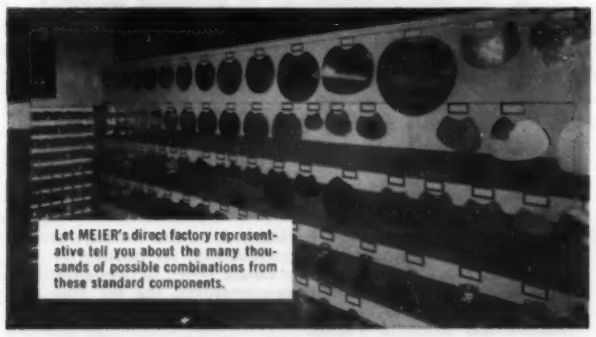
Meier Electric & Machine Company, Inc. offers you over 50 years of experience, plus the scientific and technical know-how and equipment necessary to provide you with the correct propeller for *your* product. With this background of experience —coupled with continuous scientific research, modern production and technical facilities —we're in a wonderful position to serve both large and small manufacturers of products involving air movement. Try MEIER.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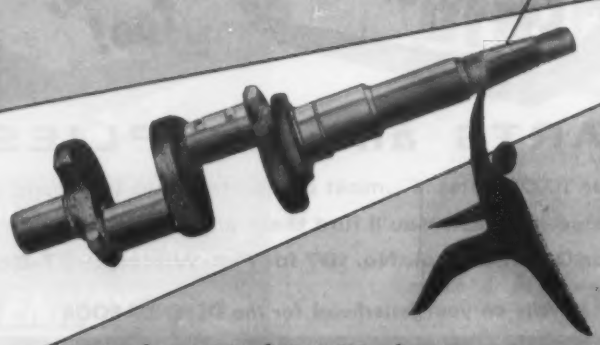

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ASHAE Meeting--

(Concluded from Page 1)

society will be presented to eight members of professional distinction at the welcome luncheon on Monday, Jan. 27. Only five members of the society have been so honored to date.

The eight are: Albert L. Baum, the late Alfred C. Buensod, Professor Carl F. Kayan, all of New York City; Irwin W. Cotton, Indianapolis; Edward L. Crosby, Baltimore; Edmund P. Heckel, Chicago; Professor Emeritus Frank B. Rowley, Minneapolis; and George M. Simonson, San Francisco.

Alumni of the University of Illinois are planning an informal Illini dinner and get together Monday evening at 5:30.

Convention program follows:

SATURDAY, JAN. 25

10 a.m.—Committee meetings.
1 p.m.—Research executive committee meeting.

SUNDAY, JAN. 26

10 a.m.—Council meeting.
10 a.m.—Committee on research.

MONDAY, JAN. 27

9 a.m.—First Session.
Call to order and report of president—P. B. Gordon.
Report of council—A. V. Hutchinson.
Report of treasurer—C. H. Pesterfield.
Topical Session on Solar Energy—R. C. Jordan, chairman.
"Direct Solar Radiation Available on Clear Days" by J. L. Threlkeld and R. C. Jordan.
"A High-Flux Low-Temperature Solar Collector" by R. G. Nevins and P. E. McNall, Jr.
"Performance of a Solar Heated Office Building" by F. H. Bridgers, D. D. Paxton, and R. W. Haines.
"Sun Energy Assistance for Air-Type Heat Pumps" by C. P. Davis, Jr. and R. I. Lipper.
12:30 p.m.—Welcome Luncheon.
Toastmaster: T. F. Rockwell, Pittsburgh.
Speaker: Hon. David L. Lawrence, Mayor of Pittsburgh.
Presentation of Certificates to Fellows.
Presentation of the ASHAE-Homer Addams Award.
2 p.m.—TAC meetings, Inspection Tours.
9:30 p.m.—Gay Nineties Party.

TUESDAY, JAN. 28

9:30 a.m.—Second Session.
Call to Order—1st Vice Pres. E. R. Queer.
Report of committee on research—H. A. Lockhart, chairman.
Report of Inspectors of Election.
"Cooling Load from Thermal Network Solutions" by Harry Buchberg.
"The ASHAE Air-Borne Dust Survey" by K. T. Whitby, A. B. Algren, R. C. Jordan, and J. C. Annis.
"Natural Convection Cooling and Dehumidifying" by L. G. Seigel and W. L. Bryan.
"Stable Hot-Wire Anemometer for Low Speeds" by J. F. Kemp.
9:30 a.m.—Third Session.
Symposium on High Temperature Water. P. N. Vinther, moderator.
"Economic Evaluation of High Temperature Water" by E. M. Thompson.
"Marine Application of High Temperature Water" by S. W. Brown.
"Design of High Temperature Water Systems for Military Installations" by C. A. Carter and B. L. Sturdevant.
"Heating and Air Conditioning a Civilian Airport" by Charles Broder.
"British and European Design and Construction Methods" by George Applegate, Jr.
12:15 p.m.—Dutch Treat Luncheon—Life Members Club.
1 p.m.—Inspection Tours.
1:30 p.m.—Nominating committee, TAC meetings.
7 p.m.—Past Presidents' Dinner.
7:30 p.m.—TAC meetings.
8 p.m.—Chapter Editors' Conference. B. W. Farnes, chairman.

WEDNESDAY, JAN. 29

9:30 a.m.—Fourth Session.
Call to order, Pres. P. B. Gordon.
"Effect of Heated-Floor Temperatures on Comfort" by R. G. Nevins and A. O. Flinner.
"Lighting and Cooled Air Effects on Panel Cooling" by L. F. Schutrum and T. C. Min.
"Radiant Drafts from Cold Ceilings" by H. E. Ronge and B. E. Lofstedt.
9:30 a.m.—Fifth Session.
Call to order, Treas. C. H. Peterfield.
"Local Climatic Weather Data" by W. L. Holladay.
"A Dynamic Heat Storage System" by T. L. Etherington.
"Improving Attic Space Insulating Values" by F. A. Joy.
2 p.m.—Sixth Session.
Call to order, 1st Vice Pres. E. R. Queer.
"Chimney and Stack Design for Gas Fired Equipment" by R. L. Stone.
"Pressure Losses and Flow Characteristics of Multiple Leaf Dampers" by E. J. Brown and J. R. Fellows.
"Fan Noise Variation with Changing Fan Operation" by R. D. Madison and J. B. Graham.
2 p.m.—Seventh Session.
Call to order, Pres. P. B. Gordon.
Symposium on School Heating, Ventilating, and Air Conditioning. W. G. Hole, moderator.
"Educator's View of Need for Good Classroom Environment" by G. B. Wadzeck.
"HV&AC Design Practice for Schools" by Henry Wright.
"Economics of School Heating and Air Conditioning" by Z. A. Marsh.
"State Board Problems—Financing and Others" by C. B. Hershey.
"Looking Into the Future" by E. G. Good.
7 p.m.—Annual Banquet.
Toastmaster: Thomas C. Pratt.
Speaker: Allison R. Maxwell, Jr., president, Pittsburgh Steel Co.
Introduction and Installation of Officers.
Presentation of F. Paul Anderson and Past President's awards.

THURSDAY, JAN. 30

9 a.m.—Organization meeting of 1958 Council.
10 a.m.—Organization meeting of 1958 committee on research.

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Regardless of the design of your motor stator, there is a Mighty Mite that will provide continuous and automatic protection against overload.

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The Mighty Mite motor protector is accurately pre-calibrated to break the circuit at any required temperature up to 200°C. There is no further adjustment or handling necessary prior to actual installation in the stator. In addition, Mighty Mite protectors are packaged, "ready-to-use" in production line assembly.

Mighty Mite motor protectors are available as small as ¾" long x 5/16" wide for motors rated up to ⅓ h.p. 115/230 volts. Regardless of stator design, you can protect your motor with a dependable, fully automatic Mighty Mite motor protector.

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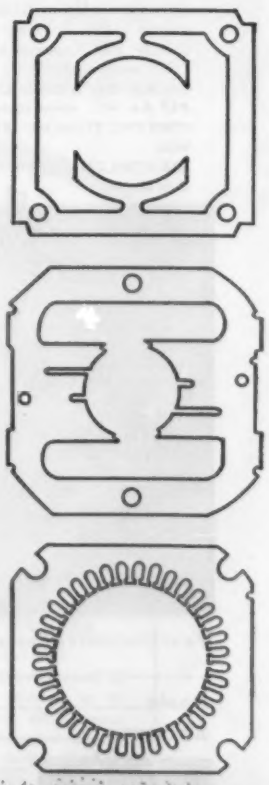

MIGHTY MITE MOTOR PROTECTORS

MECHANICAL INDUSTRIES PRODUCTION CO.

Refrigeration Problems
And Their Solution
(*As Written by Paul Reed*)

The late Paul Reed, one of the refrigeration industry's most respected writers and teachers, wrote a column on "Refrigeration Problems and Their Solution" which was published regularly in AIR CONDITIONING & REFRIGERATION NEWS for more than 15 years.

Readers throughout the years have hailed this written material as some of the most practical and helpful that has ever been published. Fortunately, the author had an opportunity to revise some of this material and the NEWS is currently re-publishing it.

Cleaning a System Flooded with Water

QUESTION:

I should like to get your advice about using carbon tetrachloride to clean the inside of a system that has been flooded with water from a frozen condenser that broke and flooded the entire system. The system consists of a 5-hp. condensing unit and a blower-type low side in a room held at -10° F. to freeze fish. Refrigerant-12 is used.

I have been told that to clean out the system, and at the same time take out the water, I should fill a 2-in. pipe, 3 ft. long with carbon tetrachloride, connect it to the inlet of the blower coil, and blow it through the coil with a 100-lb. pressure of CO_2 and then to repeat this.

Then blow CO_2 through awhile, build up a pressure, and test for leaks. After this, pull a 29-in. vacuum for 24 to 36 hours with a room temperature of 85° F. When this vacuum is completed, to equalize the pressure with the refrigerant, put on a large drier vertically in the liquid line and again pump a 29-in. vacuum.

I wish to know if this is the correct way to clean and dry this system, and will appreciate your help.

ANSWER:

From your letter, it appears that no steps have been taken to put this system back into operation, and that it is now standing with a great deal of water throughout the system, but little or no Refrigerant-12. Presumably, the condenser has been repaired or a new one has been obtained.

As to carbon tetrachloride: It is not suitable to use on this job, for two reasons.

1. Carbon tet is quite toxic, as covered in previous articles. To wash out this 5-hp. system, would mean quite a little carbon tet being blown into the air.

You and the other men on the job could be seriously injured from breathing that much carbon tet. Quite possibly, you might not be affected at the time, and it might be a couple of days before its effects made themselves felt.

Anything that is as dangerous as that, should be used only in very small quantities, and then only in well-ventilated rooms or outdoors.

CARBON TET PROMOTES COPPER PLATING

2. Carbon tet is not suitable for use inside a system, especially a wet system like the one you describe. Carbon tet absorbs water very readily it is true, but in doing so, forms hydrochloric (also called muriatic) acid. This acid attacks copper very actively and leaves a grayish, scale-like powder that is picked up by the refrigerant and oil. It may contribute to the formation of sludges, but it is certain that it very actively promotes copper plating.

CLEANING THE COMPRESSOR

The compressor is probably showing a very considerable amount of corrosion due to the presence of so much water. The compressor should be at least partially disassembled, and gone over carefully; the valves replaced; the valve plates and seal relapped; bearings examined; and shaft, pistons, and cylinders lightly sanded with fine sandpaper (about No. 320) to remove any rust or other loose material.

After the compressor is reassembled, it should be refilled with new oil. Considering that the evaporator on this installation is probably held at about -20° to -25° F., the oil chosen should be a very pale, highly refined, dewaxed oil, having a waxfree test down to not above -25° F.

Using a highly refined, wax-free oil is advisable on about any commercial application, but especially if the evaporator is carried at zero or below.

WASHING OUT THE EXPANSION VALVE

The rest of the system—the expansion valve, the refrigerant lines, the blower coil, and perhaps the condenser, have a lot of water in them. The following is a good way to clean and dry them.

Remove the expansion valve and fill it with methyl alcohol, cap it, shake it, and let it stand awhile. Later empty the alcohol, refill and repeat. Blow out the valve well, using CO_2 with the regulator or the CO_2 cylinder set at about 40 or 50 p.s.i.

FLUSHING AND DRYING THE LINES AND COILS

Next, blow the lines and coils out with CO_2, or even better, dry nitrogen, which may be obtained in cylinders, much the same as CO_2. Nitrogen is inexpensive and is even better than CO_2, as nitrogen has an affinity for moisture and helps dry the system, but leaves no bad effects.

If there are any oil separators, accumulators, or other traps that may contain a great deal of water or wet oil or refrigerant, remove those parts, empty and blow them out, and dry them separately, preferably in an oven, for they are difficult to blow out.

Then blow out the lines and coils with CO_2 or nitrogen. This will remove the greater part of the water and wet refrigerant and oil. However, it will not remove the water and wet refrigerant and wet oil clinging to the inside surfaces of the lines and coils.

It would then be helpful to flush the lines and coil out. Use methyl alcohol (also called methanol) which absorbs water readily, but does not form harmful acids as carbon tet does.

It is not advisable to breathe too much of it; moreover, it is flammable. In the interest of safety, run a purge line from the suction line at the compressor to the outside. Then by connecting the liquid line directly to the blower coil, you can pour methyl alcohol into the liquid line and blow it through the liquid line, blower coil, and suction line to the outside, by connecting the CO_2 or nitrogen cylinder to the liquid line.

Use plenty of alcohol; at least a quart or two. Blow it slowly at first with just a few pounds pressure, so as to give it a chance to mix well with the oil and refrig-

(Concluded on next page)

you want 'em? we got 'em!

28 FULL LINES!

d-h AIR CONDITIONING

SPOTAIRE ROOM-by-ROOM AIR CONDITIONERS: **#1** d-h LRC's: basic unit, concealed or deluxe cabinet; 4 models, 200 thru 600 cfm. **#2** d-h VRC's: concealed or deluxe consoles; 3 models. 200 thru 600 cfm. **#3** d-h HRC's: 3 suspended types, 19 models, 300 thru 1750 cfm.

AIR HANDLING UNITS: **#4** d-h HH Series: ceiling suspended. **#5** d-h HHV Series: floor mounted. Both: 14 models, 624 thru 28000 cfm.

VENTILATING UNITS: **#6** d-h AM: 1752 thru 32250 cfm.

MULTIZONE TYPES: **#7** d-h FLEXAZONE: for simultaneous, independent, variable heating, cooling, ventilating; 1752 thru 32250 cfm.

PACKAGED AIR CONDITIONERS: **#8** d-h AECR: with built-in evaporative condenser. **#9** d-h SCR: with water-cooled condenser. Both, 7½ thru 75 H.P.

PACKAGED STORE COOLERS: **#10** d-h DYNA-PAC & ROYALAIRE: 2 thru 15 tons.

PACKAGED WATER CHILLERS: **#11** d-h CWG: 7½ thru 75 H.P. **#12** d-h CWG-E: attached evaporative condenser. Both 7½ thru 75 H.P.

EVAPORATIVE CONDENSERS: **#13** d-h PERMA-FAN: 13 models; 5 thru 110 tons.

COILS: **#14** Extended surface; steam, water, DX **#15** Type "H"; small applications, DX or chilled water.

PACKAGED WATER CHILLERS: **#16** d-h AC; air cooled. **#17** d-h WC: water cooled. Both, 2, 3, 5 H.P.

COOLING TOWERS: **#18** d-h WMT: 13 models, 5 thru 100 tons.

AIR-COOLED CONDENSERS: **#19** d-h ACC: 5 models, 2 thru 20 tons.

d-h COMMERCIAL REFRIGERATION:

UNIT COOLERS: **#20** d-h FLOCOLD UNIT COOLERS: over 34° F.; 11 models, 750 thru 6000 cfm. **#21** d-h FLOCOLD: under 34° F., water defrost, 7 models, 750 thru 6000 cfm. **#22** d-h FLOCOLD: over and under 34° F.; water defrost ammonia, 4 models, 2000 thru 6000 cfm. **#23** d-h SPASAVER: WALK-IN BOXES: over 34° F., 7 models, 750 thru 4400 cfm. **#24** d-h HOT SHOT: AUTOMATIC ELECTRIC DEFROST: under 34° F., 6 models, 700 thru 3700 cfm. **#25** d-h HRC: MEAT CUTTING & PACKAGING ROOM UNITS: 14 models, 500 thru 1750 cfm. **#26** d-h FLOCOLD HOT PAN; LIQUOR/MEAT WALK-IN: 8 models, 750 thru 6000 cfm.

PRODUCT COOLERS: **#27** d-h FLOCOLD (FT & CT: FTWD & CTWD; FTAF & CTAF). 9 models; 1314 to 37320 cfm.

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For more information about products advertised on this page use Information Center, page 18.

Cleaning System--

(Concluded from preceding page)

erant. Finally give it a hard blow, with from 100 to 200 lbs. pressure, until there seems to be no more wet vapor coming from the purge line.

This should clean the lines and coil pretty well, and it should remove most of the water, oil, and refrigerant. But there is still a film of alcohol, moisture, oil, and some refrigerant on the inner walls. This will have to be evaporated into a vapor to get it out.

DRYING BY DOUBLE EVACUATION

Flush and blow out the condenser and receiver in the same manner. Re-assemble the entire system and pump a vacuum on it. It will pay you to use a good vacuum pump, so that you can draw at least a 29-in. vacuum. It is not advisable to use the refrigerating compressor to pump the vacuum with, for that pulls all the moisture and everything else through the compressor.

A good vacuum pump can draw almost a perfect vacuum, that is, down to below 29½ in. In a 90° F. room, the vacuum gauge will hang at about 28½ in. for quite awhile, for 28½ in. of vacuum is the pressure corresponding to boiling temperature of water at about 90° F. It may take several hours to get a 29-in. vacuum, but when you do, let the vacuum pump run for another hour or so.

Then stop the vacuum pump and break the vacuum to at least zero gauge, with nitrogen. You can use Refrigerant-12, but nitrogen is better, and much less expensive. CO_2 can be used, or even warm dry air. Now is a good time to test for leaks. You can build up the CO_2 pressure to 100 lbs. and test with soap and water or you can put in enough Refrigerant-12 to bring the pressure up to zero gauge and build it up to 100 p.s.i.g. with nitrogen or CO_2, and test with a halide torch.

After you are sure of no leaks again start the vacuum pump and pump the vacuum down to 29 in. at least. You are then ready to release the new charge of refrigerant into the system.

This is called the "Double Dehydration Method," or the "Double Evacuation Method."

This method will dry the system down to far below a -25° F. dewpoint, which is about what you will require with a -25° F. evaporator in order to avoid freeze-up trouble at the expansion valve. However, new Refrigerant-12 itself is only dry to about a zero dewpoint, so you should put on a generous sized drier, to remove the excess moisture from the new charge of Refrigerant-12.

Rubatex Launches $1,000,000 Expansion Program To Increase Output by 50%

ELYRIA, Ohio—The Rubatex Div. of Great American Industries, Inc., producer of closed cellular rubber products for industry, has embarked upon a $1,000,000 expansion program, it was announced by Robert A. Pritzker, G.A.I. president.

He said the program is the largest in the division's history and will include both additional plant facilities and equipment at the division's headquarters in Bedford, Va.

Pritzker said the expansion was made necessary by an increased demand for the division's products among its traditional customers in the air conditioning, heating, automotive, sporting goods, and footwear industries as well as to meet needs of such new markets as electronic instrument cases, skin diving suits, aircraft, and construction.

Sales in 1957 should be 20% above those in 1956 and this has necessitated an extensive amount of overtime, Pritzker noted. The expansion will boost capacity almost 50%.

A second plant, originally occupied by Continental Can Co., has been purchased in Bedford. This brick building will be used for secondary manufacturing operations, additional warehousing, packaging, and shipping. The principle rubber making functions will remain at the division's main Bedford plant.

A considerable portion of the equipment outlay will be devoted to the development of new materials and processes. Much of the current sales increase is attributed by Pritzker to the emphasis placed by Rubatex on research and development. Additional laboratory facilities are included in the program.

Reefer Rating Project To Be TTMA Topic At Jan. 20-22 Meeting

WASHINGTON, D. C. — A progress report on the Truck-Trailer Manufacturers Association's reefer rating project will be presented at the association's 17th annual meeting Jan. 20-22 in the Biltmore hotel, Palm Beach, Fla.

The report will be presented by P. R. Achenbach, chairman of the steering committee of the government-industry refrigerated trailer program in the National Bureau of Standards.

The association's engineering committee, chairmanned by William Hummel, chief engineer of Trailmobile, Inc. will hold an open meeting on Monday and a joint meeting with the refrigeration subcommittee Tuesday.

Reject Union

WINSTON-SALEM, N. C.—Employes of Air Conditioning Corp. here recently rejected a proposal to select Sheet Metal Workers International Association, AFL-CIO, as its bargaining agent.

New ANEMOTHERM AIR METER gives you

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The new model 60 Anemotherm Air Meter helps you balance heating, ventilating and air conditioning systems the modern pushbutton way. It puts air velocity, air temperature and static pressure at your fingertips ... pays for itself through time saved on only one major job. • **Write for Bulletin 55 giving all essential data.**

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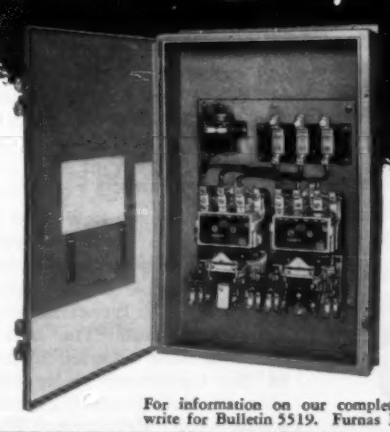

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SLUDGE—FLUX
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RUST—CARBON
and other contaminants

Result in plugged driers—pressure drop—poor heat transfer—damaged parts—excessive running and HERMETIC BURNOUTS

Protect your systems by installing low-cost, high capacity

DFN PERMACLEAN FILTERS

for permanent Suction and Liquid line service

It is now considered standard practice to install a low micron filter in the suction side of every installation—especially those using a hermetically sealed unit. This pays big dividends by eliminating troubles, shutdowns, callbacks and expensive cleansing jobs caused by foreign matter in the system.

Low micron filtration is also recommended for liquid line service ahead of driers, expansion or solenoid valves, capillary tubes or other similar devices.

DFN Permaclean Filters have proved outstanding in keeping refrigerants and oil clean, protecting working parts, keeping systems running at peak efficiency. Many sizes to meet all needs. Factory-sealed and replaceable cartridge types. Get the habit—install DFN Permaclean Filters on every unit—new or old.

PERMACLEAN FILTERS stop particles as small as 5 to 10 microns, or 25 times more effectiveness than 100 mesh screen. Provide large filtering surface area.

• Ask your Wholesaler
• Write us for Bulletin G-19

THE McINTIRE CO. LIVINGSTON 11, N. J.

Distributors Will See Scotsman 'Golden 50' Line at Regional Meetings

ALBERT LEA, Minn.—Three regional distributor meetings in St. Louis, New York City, and Denver will help Scotsman, Queen Products, Inc. launch its 1958 "Golden 50" line of ice cubers, flakers, drink dispensers, bins, and related equipment.

Distributor sales and service personnel will gather in Mayfair Lennox hotel in St. Louis Jan. 14-15 to view this subsidiary of King-Seeley Corp.'s new line. Park Sheraton in New York City Jan. 21-22 will be the site of the second conclave, and the western meeting will be Feb. 4-5 in Denver's Cosmopolitan hotel.

SALES PROMOTION THEME

"Scotsman's Golden 50 for '58" is the sales promotion theme because Scotsman now offers 50 "Super Cuber," "Super Flaker," "Super Bin," drink dispenser, and related models. New items were first announced at a national sales get-together Jan. 6-7 in the factory display rooms here.

Featured were model C-1A "Super Crusher," a compact unit that automatically crushes up to 30 lbs. of ice per minute, needs 1½ sq. ft. of floor space, the company said. A control knob selects size of crushed ice desired.

New model C-5A is a crushing attachment for the SC-500E Super Cuber which converts any part of its 500 lb. per day cube capacity to any size crushed ice by a dial control. Model SF-8 Super Flaker, largest crushed ice machine in the line, provides a daily capacity of 4,000 lbs. It requires 8⅓ sq. ft. of floor space, stands 36 in. high.

PROGRAM INTRODUCED

Attending the national meeting were Scotsman regional sales managers from all parts of the U. S. and Canada. R. J. Lickteig, vice president and general manager of Scotsman, introduced the new sales program and its array of national advertising and promotional material.

National Service Manager Charles Reed handled that phase of the meeting, and Advertising and Sales Promotion Manager Bill Norman described the 1958 advertising literature and sales and dealer aids. It will be "the most complete program of advertising, promotion, and sales aids the company has ever offered." The program will be launched to the trade with a double-page color spread advertisement in the Jan. 27 issue of AIR CONDITIONING & REFRIGERATION NEWS.

BASIC CHEMISTRY

(As Applied In Refrigeration)

Part 6—Refrigerant Breakdown (Con't)

By Frank J. Versagi

To get the feel of what actually happens in a unit when moisture persists, try this simple experiment. Take some Refrigerant-113 (convenient because of its high boiling point). Get some distilled water, three ordinary screw capped jars like instant coffee comes in, and three specimens of polished copper or aluminum.

Place one piece of metal in each jar, being sure that the polished surfaces are visible. Cover one specimen with cool, freshly boiled distilled water. (You'll remember that the boiling is done to drive out air).

Cover the metal in the second jar with refrigerant, then add about a quarter inch of water—any kind of water.

Cover the third specimen with dry refrigerant; if there is any doubt about the dryness of the hydrocarbon, add some desiccant to the jar.

Cover all the jars and allow them to stand for several days. In time, it will be obvious that only the metal in the jar containing refrigerant *and* water will corrode — indicating acid formation. Neither the refrigerant alone nor the water alone will cause corrosion, for no acid can form unless there is a reaction between the two.

Industry Adopts Moisture Limits

This, then, is how acid can form inside a unit. Remember that it takes a lot less water in a unit to cause acid formation than it does to freeze an expansion valve shut. The industry seems to have adopted 15 p.p.m. as the maximum water allowable in Refrigerant-12 and 60 p.p.m. for Refrigerant-22—at liquid line temperatures of 125° F.

It would be ideal to be able to determine in the field, just how wet a refrigerant actually is. Unfortunately, this has not been successfully accomplished, although there have been steps in the right direction with indicating desiccants and relatively inexpensive electronic instruments.

The practical meaning of all this information is obvious—keep moisture out, and when it gets in, remove it in a reasonable time. This has been said so many times that it is trite, but it's as important a warning as "When you drive, don't drink; when you drink, don't drive."

Familiarity Breeds Contempt

Familiarity does breed contempt, and it is easy to overlook such basic things as opened and partially used cans of oil, tubing which has lain around for days, or been carried in an open truck on a rainy day, or using reactivated driers which have only been partially reactivated.

The chemistry we have been learning should help us understand why moisture is so often talked about in refrigeration. And we now have a better understanding of the vague phrase "refrigerant breakdown." We know that the halogenated hydrocarbons can decompose with water, with air, with heat. While all of these things may happen in practice, the real monster is moisture; air and heat are secondary sources of trouble.

There is some evidence which indicates that moisture may not always be harmful, and that it may even be beneficial under some conditions. This general subject will be discussed in a later article.

(To Be Continued)

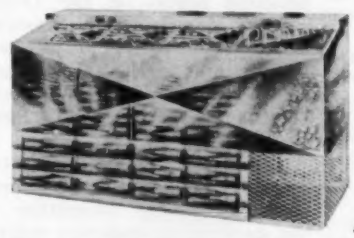
Mrs. Alfred Buensod Named Board Chairman At Buensod-Stacey

NEW YORK CITY — The board of directors of Buensod-Stacey, Inc., air conditioning manufacturer and contractor, has elected Mrs. Alfred C. Buensod to fill the unexpired term of her husband, Alfred C. Buensod, the late chairman of the board.

Mrs. Buensod is thoroughly familiar with the operations of the company, having worked with the company during its formative years, it was pointed out.

The board also increased its number from nine to 11 and added two new directors, Walter O. Hoffman, vice president in charge of specification sales, and Joseph E. McDonald, executive assistant in charge of purchasing and personnel. Both make their headquarters in the New York offices of Buensod-Stacey, which also has executive offices and plant located in Charlotte, N. C.

"A CASE OF COOL JUDGMENT"



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Remco hermetically sealed E-Z-SEE Liquid Indicators are used by more than 60 manufacturers.

They are available in brass or cadmium plated steel with flare or sweat connections. Sweat connections are swivel so that they can be soft or silver soldered with no danger from heat.

All steel indicators are UL approved for Freon-12 and -22. Write for low net prices and Bulletin R-11 for engineering details.

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Have you seen the deluxe model of the "Serviceman"?

See how much we have been able to improve this instrument that was so great from the start:—

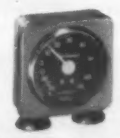
Crystal now Polystyrene . . . a lot stronger . . . far more scratch and stain resistant.

Easier to reel up tubing . . . bulb clip (see photo) changed to make reeling handy . . . spiral spring near bulb protects tubing from sharp bending.

"Recalibrator" screw right out in the open . . . on back of case for quick and easy access.

Bourdon tube permanently leak tight . . . you can't see this, but you'll find it out in use. An internal stop protects against excessive pressures.

If your faithful old "Serviceman" has earned retirement, why not replace it with the new 3-scale Deluxe type. Standard single-scale type (see photo) also available.



Standard model tests to 40 below.

Note protected tubing, handy bulb clip; accessible "Recalibrator" screw.

Deluxe 3-scale tests to 40 below. Two added color scales show Freon —12 and —22 pressures.

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For more information about products advertised on this page use Information Center, page 18.

Australian Refrigeration Show--

(Concluded from Page 1, Col. 3)

age, food marketing, appliance distribution, and associated industries will gather for this big event.

Conferees will examine component parts and materials, and watch demonstrations of original equipment in these fields. American and European manufacturers, as well as the entire Australian industry, will display.

'TO STIMULATE INTEREST'

Convention itself will consist of lectures, films, question-and-answer periods, and discussion groups. Its purpose is to "stimulate interest, and generally advance the technical and merchandising knowledge and efficiency of personnel of firms engaged in the Australian air conditioning and refrigeration industry."

More than 1,000 Australian, American, and European business firms will participate and/or send delegates.

FOOD INDUSTRY SECTION

One special section in the exhibition has been allocated to the Australian food industry. Displays and demonstrations of frozen foods, modern self-service refrigerators, milk bar and delicatessen refrigeration equipment, reach-in models suitable for small stores, and cold room and storage plants will be featured.

Leading television and radio entertainers will be on hand to embellish and lend interest to these demonstrations and exhibits.

Monday morning, May 5, has been set aside for a reception of international delegates and their wives. The AIR Council will convene that afternoon for business discussions, and AIR members with their consorts will attend a formal dinner that evening.

Official opening of the Exhibition and Convention, with the premier of New South Wales and the Australian Ministers of Labor and Industry leading the ceremonies, is scheduled for Tuesday morning, May 6. This pageantry will be followed by an inspection of exhibits.

1ST COMMERCIAL SESSION

First commercial refrigeration session will meet from 2:15 to 4:30 that afternoon, with principal speaker Taubeneck scheduled to hold forth for an hour. A local speaker is alloted a half-hour, after which there will be a three-quarter-hour session for tea and questions.

"Techniques and ethics of selling refrigeration and air conditioning equipment," will be treated by the speakers and in the discussions which follow.

Taubeneck also will preside at all subsequent commercial sessions, and deliver additional talks each day appropriate to the topics designated for each marketing seminar.

Initial technical session (from 8 to 10:15 Tuesday evening) will hear Prof. Plank—followed by a local speaker, and a question period. Subject to be discussed is industrial refrigeration. Prof. Plank will preside over all further technical sessions.

Second technical session will get under way at 10 o'clock Wednesday morning, May 7. It will cover food preservation (particularly meat). Highlight will be a report on experimental work now being conducted in Russia.

Second commercial session will be held from 2:15 to 4:30 that afternoon. Its theme will be "the significance of a service department."

AIR officials will gavel the annual general membership meeting that evening from 8 to 10:15. At that time they will view a live television show, "The Use of Frozen Foods," and again listen to Dr. Plank and the Publisher of AIR CONDITIONING & REFRIGERATION NEWS.

Thursday morning frozen foods will be the topic. That afternoon "refrigeration as an aid to food marketing" (with special reference to self-service) is the subject for consideration. An AIR council meeting is set for 8 to 10:15 that evening.

REFRIGERATED TRANSPORT

Fourth technical session (Friday morning, May 9) will be concerned with road and rail refrigerated transport. Final commercial session that afternoon is programmed to cover economics of room air conditioners and air conditioning in general.

Saturday morning and afternoon, May 10, an outing and inspection trip for AIR delegates has been scheduled. Another live TV show dedicated to the industry will be viewed that evening by all delegates.

Further details will be announced later.

Whirlpool Refrigerators, Freezers--

(Concluded from Page 1, Col. 3)

three new refrigerators, three double-door refrigerator-freezer combinations, three upright freezers, and two chest freezers. All freezers are available with a "Fast-Freeze" fan.

Fifty home appliance models were introduced here in a day-long musical production attended by the firm's national independent distributor organization. Titled "It's Round-Up Time USA with RCA Whirlpool," starring George Gobel and Fran Allison, the presentation climaxed a two-day meeting of some 900 distributor principals, sales managers, and field representatives.

Along with refrigerators, freezers, and combinations, Whirlpool launched gas and electric freestanding ranges, built-in electric ranges, combination sink and range tops, automatic washers and dryers, waste disposers, cabinet sinks, and an 8-in. high, 13½-in. wide full-power home vacuum cleaner.

Introduced earlier in the RCA Whirlpool line were air conditioners, dehumidifiers, built-in gas ranges, electronic ranges, laundry appliances, undercounter and mobile dishwashers, kitchen cabinets, and ice cube makers. Total number of models for '58 tops 100.

Other line leaders offered here: a 30-in. electric range with a 24-in. oven and built-in time and temperature instructions for cooking more than 82 main dishes; and a drop-in range top with countertop controls and a surface unit that reaches maximum heat in less than 13 seconds, the company claims.

PRICES UP 3-6%

Prices of the 1958 line will range from 3 to 6% above the company's 1957 line, according to a spokesman who added that "although the tendency is upward, some tags will remain the same."

In the '58 Mark models of refrigerators and freezers, "ideal temperature is maintained by a new no-frost method of blowing cold dry air into the cabinet interior," according to Whirlpool. "Frost-gathering coils are eliminated from food storage areas." It was pointed out that cold dry air prevents moisture from forming on contents.

Cold air flows along each side of a center-mounted meat chest in refrigerators and maintains 33°, the company said. Over 12 lbs. of meat can be stored in the chest. Fresh flavor in other refrigerated foods is protected by even, cold temperature and an ultra-violet air purifying lamp which helps retard bacteria growth, it was stated.

Other refrigerator features: indirect interior lighting; full-width glide-out shelf; four removable split shelves; door with separate crispers for fruits and vegetables with combined 58-lb. capacity; butter conditioner in door; and two egg compartments in door.

An ice cube ejector and portable server bin which holds 300 cubes is a Mark model freezer highlight. Automatic ice cube tray filler is available as accessory. An undercounter freezer and the lower section of a combination unit have toe-touch door openers.

FLUSH INSTALLATION

Free of protruding coils and ventilated through built-in front louvers, the units may be installed flush to back wall, side wall, and adjacent cabinets or appliances, it was pointed out. Doors open fully even in a corner installation, the company says, since hinges are within cabinets. Both left and right hand hinges are offered.

Charcoal gray, brushed chrome, and rosewood are used as exterior trim in the square-line models. Over-all exterior color finishes include white, pink, and yellow. Interiors are styled in dawn pink and deep gray porcelain enamel.

A choice of top or bottom-mounted freezer is offered by two 13-cu. ft. "Imperial" refrigerators. They feature picture-frame styling, built-in air circulation system with purifying lamp, automatic defrosting refrigerator, and many specialized storage compartments. Each is offered in white, pink, or yellow.

Other models in the line include a 12-cu. ft. two-door unit with automatic defrost, a 12-cu. ft. single-door model with a 77-lb. capacity frozen food compartment, and two 8-cu. ft. units.

12 TO 21-CU. FT. FREEZERS

New food freezers range in size from 12 to 21 cu. ft. with storage capacities for from 432 to 740 lbs. of food. Each carries a five-year $200 warranty to protect against food spoilage.

"Supreme" model refrigerator-freezer holds up to 104 lbs. of frozen foods in separate 0° freezer at top of the two-door 12-cu. ft. combination. Refrigerator interior has 12-lb. capacity meat chest, aluminum glide-out shelf, and twin porcelain enameled crispers with over ¾ bu. capacity of fresh fruits and vegetables.

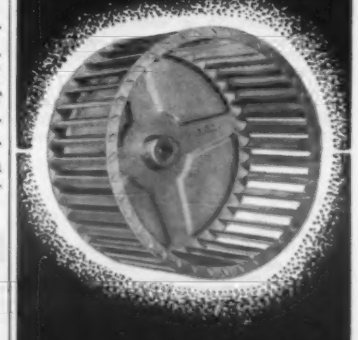
Automatic defrost and adjustable temperature control are provided in the 8-cu. ft. refrigerator section. Separate 3-cu. ft. freezer has two prime freezing shelves, three ejector ice cube trays, and two door shelves.

"Custom" refrigerator is an 8-cu. ft. unit which includes a 40-lb. capacity freezer section, automatic interior light, and wide crisper that holds over ¾ bu. of fruits and vegetables. Butter compartment, egg racks, and three shelves are built into the door. There are two freezer shelves, two ejector ice cube trays, and full-width tray.

"Deluxe" refrigerator comes in two models: a 12-cu. ft. unit has 10-cu. ft. refrigerator section and 62-lb. capacity freezer section; an 8-cu. ft model has a 7-cu. ft. refrigerator and 26-lb. freezer section.

Admiral CORPORATION uses REVCOR BLASTAIRE BLOWER WHEELS

Because they can depend on Revcor Wheels to give them constant reliable performance!



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NEW "DXF" series DRY-EX®
with star-insert tubing
has 25% more capacity per cu. ft.

Again, Acme has made a major advancement in liquid chiller design by developing a radically new copper tubing with star-shaped aluminum insert. Results: greater heat transfer capacity per dollar, less refrigerant and insulation required, and lower shipping and handling costs. For F-22 and F-12; to 400 tons.

'Phone or write Acme for details

Our specially devised integral, accessory, storage bin gives
Larger storage capacity (400/500 lbs.)
to the 200 pound per day
FRIGIDAIRE ICE CUBE MAKER
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ice cube crushers for Frigidaire ice cubers
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CLASSIFIED ADVERTISING

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ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other address by actual word count. Please send payment with order.

POSITIONS WANTED

SALES ENGINEER: 10 years' selling experience in Midwest area for nationally known manufacturer of refrigeration and air conditioning control valves. Excellent following among manufacturers, wholesalers and contractors. Proven sales record. Desire association with progressive component manufacturer. Experienced in handling field service problems. BOX A5947, Air Conditioning & Refrigeration News.

AIR CONDITIONING, heating and refrigeration engineer, with manufacture, consultant and contractor experience would like to do design, engineering and/or estimating at home. Can pick up and return work in New York Metropolitan area. BOX A5949, Air Conditioning & Refrigeration News.

AMBITIOUS, AGGRESSIVE young executive 32 years of age, 12 years' sales, management, and business experience with large manufacturer and dealer distributor operation, B.S. degree, speaking ability, desires position in management, marketing or public relations with manufacturer or independent concern. Average annual income app. $10,000.00. BOX A5950, Air Conditioning & Refrigeration News.

POSITIONS AVAILABLE

AIR CONDITIONING & refrigeration service mechanics wanted. Steady year round work for qualified men. York experience helpful but not essential. Open shop—Write CERTIFIED MAINTENANCE, INC., 12345 West Dixie Highway, North Miami 61, Florida.

OPPORTUNITY KNOCKS for good men road-blocked or stymied in present job. Steady growth and expansion has created additional requirements for a refrigeration engineer and product service technician. If you qualify, here is a once-in-a-lifetime opportunity to become associated with a leading manufacturer in the commercial refrigeration industry. Arrange an interview now! Phone, write, or wire resume and salary requirements to Bill Walsh, FOSTER REFRIGERATOR CORPORATION, Hudson, New York, Phone 8-1508.

LEADING MANUFACTURER of air conditioning and refrigeration components has sales engineering opening in New York City. Extensive sealed sales experience in the industry field required. Salary commensurate with ability. Submission of complete employment record prerequisite to personal interview. All confidences respected. Please address all replies to BOX A5934, Air Conditioning & Refrigeration News.

AIR CONDITIONING Project Engineer. Rapidly expanding Michigan manufacturer of air conditioning equipment needs experienced project engineer familiar with the design and testing of room air conditioners or residential central system. Attractive salary and profit sharing plan. Reply BOX A5939, Air Conditioning & Refrigeration News.

LARGEST CARRIER air conditioning & heating contractor in Northeastern Ohio wants an experienced air conditioning man. Must know service, installation, design and engineering applied air conditioning installations. Send in application with inquiry stating experience, background and desired salary. BOX A5941, Air Conditioning & Refrigeration News.

SALES ENGINEER: Excellent opportunity in expanding OEM sales department of well known manufacturer of control valves and devices. Engineering education desirable. Development or application experience in refrigeration, air conditioning, or heating essential. In reply state education, experience, earnings, personal data. Interviews arranged with qualified applicants. Replies held in confidence. BOX A5944, Air Conditioning & Refrigeration News.

PLANT MANAGER & chief engineer for company specializing in high quality industrial refrigeration and gas handling equipment. Must have experience in refrigeration manufacturing and be able to take charge of development program. Company located in Metropolitan New York area. BOX A5948, Air Conditioning & Refrigeration News.

REFRIGERATION SERVICEMAN wanted, experienced in installation and servicing of both refrigeration and air conditioning. Small company located in Middle West. Guaranteed year round work, paid vacations. In reply give full experience, qualifications, age, etc. BOX A5951, Air Conditioning & Refrigeration News.

SUBSTANTIAL MANUFACTURER of refrigeration products has just acquired manufacturing rights to a line of residential air conditioners of proven performance from a small company. We are seeking manufacturers representatives for distribution of these units consisting of both remote and packaged 2 h.p. and 3 h.p. air cooled models. Units will be attractively priced and include a liberal commission. Reply to BOX A5952, Air Conditioning & Refrigeration News.

MERCHANDISING SALESMAN with background in distributor sales of packaged and central station air conditioning and refrigeration equipment — Michigan, Northern Indiana and Ohio. Address confidential resume of experience to Worthington Corporation BOX A5953, Air Conditioning & Refrigeration News. All inquiries will be acknowledged.

COMMISSION SALES representative wanted to sell finned coils to original equipment manufacturers in the refrigeration and air conditioning industry. Plant located in New Jersey. BOX A5954, Air Conditioning & Refrigeration News.

MANUFACTURERS' REPRESENTATIVES wanted. Your big money-maker for 1958! Sell an exciting new line of carbonated drink dispensers. Years ahead of competition. Choice territories available. Please furnish full sales experience with your reply. BOX A5955, Air Conditioning & Refrigeration News.

EQUIPMENT FOR SALE

FOR SALE—York ammonia compressor, two years old, two cylinder, 5½x5½, shell and tube condenser. Vilter compressors, two cylinder, 5x5 and 4x4. All excellent condition. Operating in Battle Creek, Michigan vicinity. Will accept reasonable offer for all or part. A. G. Weil, REFRIGERATION MAINTENANCE CORPORATION, 321 East Grand Avenue, Chicago.

ALUMINUM ICE cube trays, 14 cubes—Quick release lever. 11" L x 4⅜" W x 1⅝" H. $1.00 each. Lots of 20 or more postpaid. Send for free circulars and bulletins on refrigeration parts and supplies at big savings. WALTER W. STARR, 2833 Lincoln Avenue, Chicago, Ill.

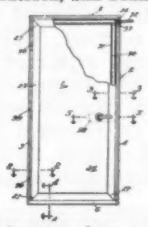
BUSINESS OPPORTUNITIES

HEATING, PIPING, plumbing, air conditioning, fire sprinkler, contracting business. San Francisco Bay area, $450,000.00 volume, 6,500 ft. shop, heavy industrial. Wants retire. Inventory, equipment, total $35,000.00 with $25,000.00 down. Will lease shop. Wonderful climate, fastest growing section California. Lots of work. P. J. RAUCH CO., 1784 Smith Ave., San Jose, California.

PATENTS

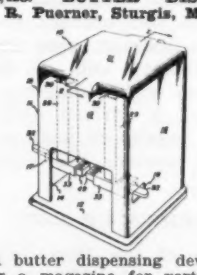
Week of October 15

2,809,402. DOOR STRUCTURE FOR REFRIGERATORS. Herbert L. Southworth, San Francisco, Calif., assignor to S. G. Anderson, San Francisco, Calif.



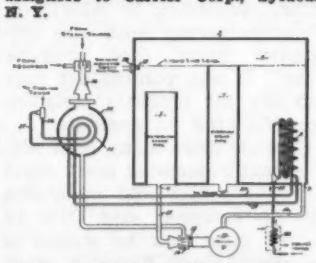
2. A refrigerator door comprising a hollow inner body having a pair of opposed faces, top and bottom edges and opposite lateral side edges, a vapor tight sheath of relatively tough sheet material secured to said body and enclosing the same for preventing movement of vapor to and from the space within said inner body for preventing warpage of said door, said body being internally provided with a latch mechanism including a latch bolt extending outwardly of one of said lateral side edges, a casing of vapor tight material surrounding said mechanism for preventing movement of vapor to and from said space through said latch mechanism.

2,809,428. BUTTER DISPENSER. Larry R. Puerner, Sturgis, Mich.



1. A butter dispensing device comprising a magazine for vertically retaining a stick of butter, a hanger detachably mounted on the lower end of said magazine and completely supported therefrom, said hanger having horizontally extending track means depending therefrom, and reciprocable means mounted on said track means for cutting and dispensing a pat of butter.

2,809,497. UNITARY PURGE ARRANGEMENT FOR ABSORPTION REFRIGERATION SYSTEMS. Louis Howell Leonard, Jr., East Syracuse, and Joseph B. Bourne, Syracuse, N. Y., assignors to Carrier Corp., Syracuse, N. Y.



5. In combination with an absorption refrigeration system including an absorber, an evaporator, a generator, and a condenser, a purging arrangement, said purging arrangement comprising a steam actuated ejector having its suction connection connected to the absorber to remove non-condensible gases therefrom, a liquid tank, a liquid actuated ejector having its discharge connected to the liquid tank and having its suction connection connected to the discharge of the steam actuated ejector, means for circulating liquid from the tank to the liquid actuated ejector and from the liquid actuated ejector to the tank to actuate said liquid actuated ejector. . . .

DRASTIC Price REDUCTION
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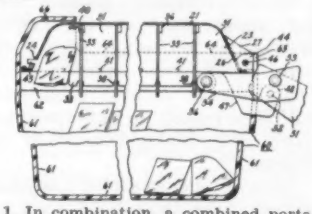
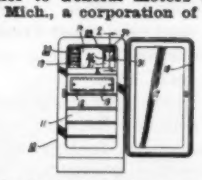
AIR CONDITIONERS
WATER COOLED
2-3-5 H.P.
These are brand new, factory stock, nationally advertised, famous brand water-cooled package units. We must move them out of our warehouse to make room for other stock. These units are priced to move fast.
All units have 100% hermetically sealed refrigerant circuits (covered by 5-year factory warranty), humid weather control, handsome naturaltone jacket, 4-way adjustable discharge grill, plenum chamber, water regulating valve, adjustable thermostat, return air grill. Available in either 208/220 volt—3 phase—60 cycle, or 230 volt—1 phase—60 cycle. All units are factory assembled, wired and ready for installation. Exceptionally compact size makes this equipment ideal wherever space is at a premium.
Write for complete details and prices to Box A 5920, Air Conditioning & Refrigeration News.

2,809,499. ICE BLOCK EJECTING DEVICE. Arthur J. Frei, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich., a corporation of Delaware.



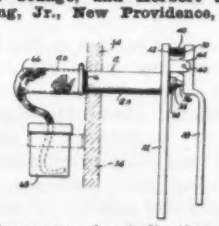
1. In combination, a combined portable ice bucket device and freezing device support for selectively storing ice blocks in a refrigerator or for transporting ice blocks away from the refrigerator, a unitary freezing device comprising an elongated tray and a grid locked therein against detachment therefrom having spaced apart substantially inflexible walls inclined with respect to the vertical and anchored in the tray for tilting movement relative thereto to loosen ice blocks frozen in the freezing device, said unitary freezing device being receivable in an inverted position on the support of said portable ice bucket device so as to allow loosened ice blocks to fall therefrom, mechanism carried by one of said devices for applying force to said grid walls in a direction lengthwise of said elongated tray to tilt them toward the vertical whereby ice blocks are mechanically released from said freezing device into said ice storage bucket device without distorting the tray. . . .

2,809,500. ICE BLOCK RELEASING DEVICE. Arthur J. Frei, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich., a corporation of Delaware.



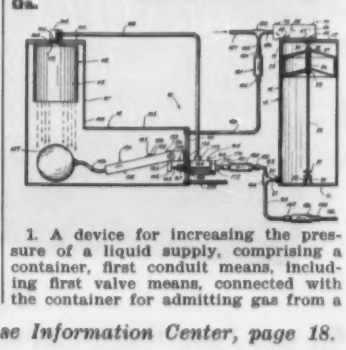
An ice bucket and tray support structure for receiving in an inverted position an ice tray having a plurality of separated ice blocks frozen in compartments thereof, said structure being constructed as a portable unit with the ice bucket inseparable from the tray support and preventing relative movement therebetween, said unit being insertable into and transportable away from a chamber in a refrigerator for selectively storing ice blocks contained in the bucket within the refrigerator or for transferring the contained ice blocks from the unit exteriorly of the refrigerator at an ice block serving point remote therefrom, and means on the bucket of said portable unit for ejecting ice blocks from a tray invertedly placed on said support thereof while the same is inside the refrigerator chamber and/or outside thereof.

2,809,523. HUMIDITY OR TEMPERATURE DIFFERENTIAL MEASURING APPARATUS. Herbert S. Burling, South Orange, and Herbert Sherman Burling, Jr., New Providence, N. J.



1. Apparatus for indicating relative humidity comprising a thermal element formed in two sections whereby two outer tubular members joined end to end have different thermal expansion characteristics and each section has an inner tubular member having the same thermal expansion as the outer tubular member of the other section, the high expansion member in one section having the same length as the high expansion member in the other section, and the low expansion elements likewise being equal in length, the lengths of the high expansible member being substantially different from the lengths of the low expansible members whereby a central zone of substantial length is formed where both the inner and outer tubular members have the same expansion characteristics. . . .

2,809,597. MOTORLESS CARBONATOR. Frank Edward Fowler, Athens, Ga.

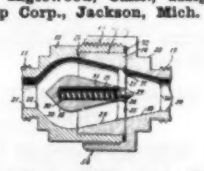


1. A device for increasing the pressure of a liquid supply, comprising a container, first conduit means, including first valve means, connected with the container for admitting gas from a relatively high pressure source thereto, second conduit means, including second valve means, connected with the container for admitting liquid from a relatively intermediate pressure source thereto, third conduit means, including third valve means, connected with the container for emitting gas therefrom, fourth conduit means, including fourth valve means, connected with said third conduit means for venting gas therefrom. . . .

Editor's Note: Patents described here have been selected from the "Official Gazette" of the United States Patent Office. They offer only a brief summary of each invention. In some instances only the first part of the digest is presented.

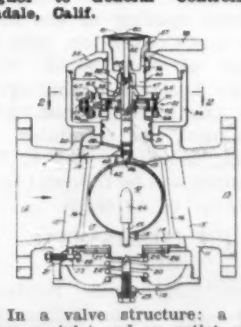
Printed copies of patents, reissued patents, and patent designs may be secured from the Patent Office; patents and reissues are 25¢ each, while designs are furnished at 10¢ each. Address orders to: Commissioner of Patents, Washington 25, D. C.

2,809,660. CUSHIONED STREAMLINED CHECK VALVE. Alvin Louis Becker, Inglewood, Calif., assignor to Aeroquip Corp., Jackson, Mich.



1. In a check valve: a pair of casing members having respective tubular end fittings for connection to respective tube sections and having respective parts for coupling one to the other, said end fittings having inner walls defining respective fluid passages, one of said casing members having a counterbore, an annular shoulder defining an inner end of said counterbore, and a bell shaped wall intersecting its respective fitting passage to define a valve seat and extending rearwardly therefrom to said shoulder, the other casing member having an intermediate wall facing in a direction toward said shoulder and having an inside wall extending from the inside periphery of said intermediate wall to its respective fitting passage; a spider including an annular rim body having a peripheral wall fitted within said counterbore and a frusto-conical inner wall registering at its forward end with the rear end of said bell-shaped wall, tapering inwardly therefrom, and registering at its rear end with the inside wall of the other casing member. . . .

2,809,662. VALVE STRUCTURE. William A. Ray, North Hollywood, Calif., assignor to General Controls Co., Glendale, Calif.



1. In a valve structure: a casing having an inlet and an outlet opening whose inner ends extend to surfaces of the casing; a closure member mounted for rotation relative to said casing and having surfaces slidable on said casing surfaces, said closure member having a passage therethrough extending to said surfaces thereof, the opposite ends of said passage being arranged so that they are in communication respectively with said inlet and outlet openings when the closure member is in one controlling position and out of communication with said openings when the closure member is rotated to an alternate controlling position; a portion of said passage being generally cylindrical and transverse to the axis of rotation of the closure member; and a closure disk in said passage-portion having a stem coaxial with said closure member and rotatable in an opening in the wall of the passage-portion, said disk conforming in diameter to the passage-portion and being rotatable with said stem between one position wherein the rim of the disk is in full engagement with the wall of the passage-portion and said passage is thereby closed, and another position wherein major portions of said rim are out of engagement with said wall so that the passage is then open; said passage-portion being at an acute angle to said stem, and the plane of said disk being at an angle to the stem complemental to acute angle. . . .

(To Be Continued)

For more information about products advertised on this page use Information Center, page 18.

Servicing Automobile Air Conditioners

(Vol. 2)

BY C. DALE MERICLE

The American Motors auto air conditioner is the twelfth make to be discussed in this series. It opens the portion of the series devoted to units offered by the Auto manufacturers. Independent makes previously described were A.R.A., Artic-Kar, Frigette, Frigikar, Kauffman, Mark IV, Airtemp, Mobilette, Novi, Vornado, and Polar-Temp.

Models discussed in the current series are 1956, 1957, and 1958. For data on earlier models readers are referred to the original series of articles, which is available now in the handy manual, *Servicing Automobile Air Conditioners.*

AMERICAN MOTORS

American Motors Corp.
14250 Plymouth Rd.
Detroit 32, Mich.

"All Season Air Conditioning" system offered as an optional accessory on American Motors automobiles is a front-end type unit. System used in 1956 and 1957 is essentially the one employed in 1955. The latter is described in detail in Vol 1 of *Servicing Automobile Air Conditioners* under "Nash."

The 1958 system incorporates a significant change in the refrigeration circuit by omitting the by-pass setup previously used.

The evaporator assembly is mounted beneath the dash in the passenger compartment. Compressor is mounted on the car engine and is driven through a magnetic clutch. Condenser is located in front of the radiator.

Refrigerant-12 is standard. Charge is 3 lbs. in 1956 through 1958 models.

Compressor

A two-cylinder reciprocating type compressor is mounted on the right side of the engine. The compressor is driven off the car engine through a magnetic clutch.

Discharge and suction service valves are mounted on the compressor.

Condenser

Condenser of the American Motors system is mounted in front of the car radiator. Receiver tank is located to the right of the condenser. On 1956 and 1957 models a check valve is provided between the condenser outlet and receiver inlet to prevent liquid slugging when the solenoid by-pass valve is open.

No such check valve is provided in the 1958 system because the by-pass circuit is not employed.

A filter and sight glass are provided in the liquid line in the engine compartment.

Instead of employing a dehydrator, this manufacturer adds a small amount of methanol to the system to prevent freeze-ups if moisture should be present. Amount of methanol used is 2 c.c. for each pound of refrigerant. Thus 6 c.c. of methanol is added to the 1956 through 1958 systems.

Evaporator

Evaporator assembly of the system includes the cooling coil, thermostatic expansion valve, and thermostat. This assembly is mounted beneath the dash. Blower is located on the engine compartment side of the fire wall.

Air is discharged into the passenger compartment through adjustable outlets on the instrument panel.

This system operates on a minimum of 25% to 30% outside air during cooling.

Controls

Air conditioner controls provide for controlling operation of the blower and the cooling and heating system. Cooling and heating controls are combined in a single lever which also operates the fan.

On 1956 and 1957 systems turning the control lever to the air conditioning position energizes the circuit to the magnetic clutch and to the thermostat controlling the solenoid by-pass valve.

The magnetic clutch is energized whenever the control lever is set for air conditioning, so the compressor runs constantly when cooling is desired. A thermostat, however, cycles the solenoid by-pass valve in the 1956-57 systems as in earlier models to control the amount of cooling effect, primarily to prevent icing of the evaporator. Thermostat is set at the factory to cut out when the temperature of the evaporator drops to 34° F. and cut in at 39° F.

When energized, the solenoid by-pass valve (located in a by-pass line between the condenser outlet and the suction line) is closed, letting the system operate in the normal manner. When de-energized, the by-pass valve opens to let refrigerant by-pass the evaporator.

The by-pass arrangement is not used on the 1958 system. Instead, the thermostat cycles the magnetic clutch and thus the compressor to control temperature.

Thermostat cut-out point of the 1958 system is 41.5°. Cut-in point is 46.5° F. These temperatures are measured at the evaporator. Actually, evaporator temperatures in the 1958 system generally run around 32° F., but the location of the power element bulb of the thermostat requires the higher cut-in and cut-out settings.

SERVICE HINTS

Evacuating System

To evacuate the system following initial installation or opening of the system for repairs, a separate vacuum pump or the compressor itself can be employed.

Whichever method is used, the system should be pulled down to a vacuum of 26 to 28 in. and maintained there for 10 to 15 minutes.

Failure to reach that low a vacuum would indicate a leak in the system, or, if the compressor itself is used for evacuation, perhaps a defective compressor.

Charging System

These systems are charged through the low side with refrigerant in the vapor state in the usual manner. Complete charge is 3 lbs. of Refrigerant-12 in the 1956 through 1958 systems.

As previously stated, methanol is added to the American Motors system to prevent freeze-ups in the event moisture may be present. Amount used is 2 c.c. for each pound of refrigerant, that is, 6 c.c. in the 1956 through 1958 models.

Trouble Chart

Service problems and diagnosis common to most automobile air conditioners will also apply to the American Motors unit. The following will serve as a guide.

No cooling.

Possible causes:

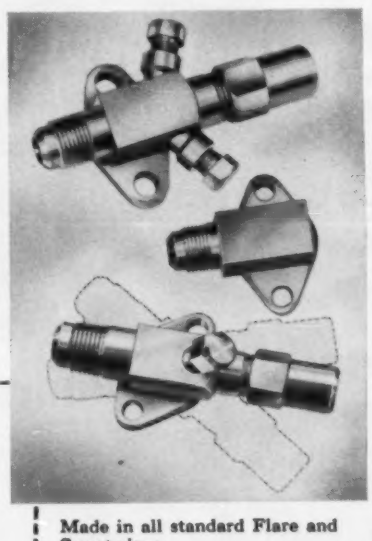
1. Drive belt broken.
2. Loose electrical connections.
3. Fan motor inoperative.
4. Magnetic clutch inoperative.
5. Solenoid by-pass valve won't close (1956 and 1957).
6. Thermostat defective.
7. Complete loss of refrigerant charge.
8. Evaporator blocked by ice.
9. Expansion valve plugged.
10. Lines restricted.
11. Compressor defective.

Insufficient cooling.

Possible causes:

1. Drive belt slipping.
2. Clutch slipping.
3. Blower motor defective.
4. Condenser clogged.
5. Shortage or overcharge of refrigerant.
6. Thermostat defective.
7. Solenoid by-pass valve won't close completely (1956 and 1957).
8. Lines restricted.
9. Expansion valve restricted.
10. Compressor service valves partially closed.

COMPRESSOR PAD VALVES and PAD FITTINGS
STATIONARY OR SWIVEL TYPE
Made in 3 sizes with 1⅛—1¼ and 2¼ Bolt Centers



Swivel Pad Valves may be set at an angle to correspond with tubing . . . Ideal for Automotive Air Conditioning Systems where space limitations exist.

All Pad Valves feature the Primore exclusive, a specially designed flange with a high unit pressure seal-off pad.

Write for illustrated catalog.

Made in all standard Flare and Sweat sizes.
Single or double ¼" Flare or ⅛" Pipe Gage Connection.
Precision manufactured Hydrogen Brazed Steel construction cuts cost.
Other Primore Valves available: Base, Angle, Receiver, Rotalock, Breakaway.

Primore Sales, inc.
2460 S. Main Street • Adrian, Michigan
REFRIGERATION designing sales engineering

When your problem is...
SIZE...SHAPE or METAL
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DEAN COLD PLATES
"Job Tailored" to your specifications
A baffling problem? Try a Dean Cold Plate made expressly to suit your particular requirements. Made in a variety of metals in cylinders, U's, angles, tanks, etc.

DEAN PRODUCTS, INC. 1042 Dean St. STerling 9-5400 Brooklyn 38, N.Y.

Choice territories now available for sales representation. Inquiries invited.

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Hermetic Compressor Design, Development, by Henri Soumerai. Only 40¢ each.
Mail this ad with name and address to: Air Conditioning & Refrigeration News, 450 W. Fort St., Detroit 26, Mich.

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FINEST REFRIGERANT DRIER MADE

19 TIMES AS EFFICIENT

Molecular sieves, the newest class of adsorbents, are the most efficient desiccants on the market . . . have the ability to adsorb at high temperatures up to 19 times more water.

- Eliminate acid corrosion
- No capacity loss due to oil adsorption
- Minimum of pressure drop
- Greater reserve capacity

SMALL IN SIZE . . . ONLY FIVE SIZES HANDLE ¼ TO 10 TONS

A standard drier can be reduced to a fraction of its usual size with no loss in drying capacity because of greater efficiency of Molecular Sieves. Only five sizes are necessary to handle installations up to 10 tons. This means a minimum inventory and stock control.

ALL COPPER AND BRASS CONSTRUCTION WITH MONEL WIRE CLOTH FILTERS
REASONABLY PRICED
PERFORMANCE RATED

KMP Moisture Magnets are tested and rated in accordance with ARI STANDARD 710

WRITE for full information. Inquiries welcomed.

KMP KENMORE MACHINE PRODUCTS, INC.
LYONS, NEW YORK

For more information about products advertised on this page use Information Center, page 18.

Carrier Net--

(Concluded from Page 1, Col. 4)

were $238,345,000. Earnings for fiscal 1956 were $10,937,000 or $4.99 per common share. The backlog total at the end of October a year ago was $105,282,000.

Regarding the balance sheet at the close of fiscal 1957, the corporation had on hand cash or equivalent totaling $38,486,000, of which $8 million was set aside for completion of the expansion and improvement program announced in 1956. Working capital amounted to $105,328,000, with the ratio between current assets and current liabilities being 3.55 to 1.

As of Oct. 31, 1956, total cash or equivalent amounted to $32,033,000, of which $9,500,000 was segregated for expansion and improvement. Working capital stood at $90,234,000 and the ratio between current assets and current liabilities was 2.65 to 1.

INVENTORIES REDUCED

Inventories were reduced during fiscal 1957 by more than $13 million. This involved cutbacks in many production schedules and the attendant adverse effect on profits, it was noted.

All ngures include those of Elliott Co., merged into Carrier as of July 31, 1957. Net sales and earnings as reported for fiscal 1956 reflect Elliott operations for the 12 months ended Dec. 31, 1956, since its fiscal year had been the same as the calendar year.

Commenting on the results for fiscal 1957, Cloud Wampler, chairman of the board said: "Carrier ended the year in a very strong financial position, reflecting the successful execution of a planned inventory reduction program.

"Volume and profits in the heavy machinery field, including those of Elliott, were reasonably satisfactory. However, earnings of the Carrier divisions specializing in smaller equipment were considerably less than normal even though their net sales were only slightly lower than in the preceding fiscal year.

PROFIT SQUEEZE NOTED

"This unsatisfactory showing was primarily the result of the profit squeeze and the cut-back in production schedules so that inventories, including those of distributors and dealers, might be brought into balance. Related factors were tight money, the further decline in housing starts, and weather conditions unfavorable for the air conditioning business in many important markets.

"In the fiscal year which began Nov. 1, there will be a more normal relationship between factory production and shipments than in 1957. This, together with a continuing aggressive program to improve costs and reduce expenses, should bring about some improvement in earnings.

"But the production and shipment of many product lines will be closer to the actual retail selling season than in recent years. Accordingly, the anticipated earnings improvement will not be evident in the early months of the current fiscal period, for which operating losses have been budgeted."

Whirlpool Gas Refrigerator--

(Concluded from Page 1, Col. 4)

refrigerators—both absorption and compression types, "Wonderbar Refrigerettes," automatic ice makers, and food freezers on a world-wide basis.

Describing the transaction, Gray said, "the purchase includes a manufacturing building of about 750,000 sq. ft. located on about 20 acres of land in Evansville, Ind., an adjoining four-acre parking lot, and specialized machinery, equipment, fixtures, tools, dies, jigs, and inventory."

Gray said the decision to market a line of gas refrigerators was reached when utility companies representing the greater part of all the household gas meters in the U. S. individually expressed their intention to promote and sell a quantity of RCA Whirlpool gas refrigerators considered sufficient in the aggregate, to warrant production by Whirlpool.

Though Gray did not mention a specific figure, the aggregate quantity is reported to be about 50,000 units.

Menzies, in reporting the sale to Servel stockholders, said that with the proceeds, Servel now has cash on hand or equivalent and current accounts receivable totaling approximately $15 million.

It is the company's intention, he reiterated, to acquire one or more companies in a growth industry of a stable character and with a demonstrated earning capacity.

Servel still retains property in Evansville with a total space of more than 500,000 sq. ft.

Menzies said half of these remaining assets are expected to be sold for cash within 90 days. The other half earn income.

Minneapolis Union Dispute--

(Concluded from Page 1, Col. 5)

of the Plumbing and Pipefitting Industry.

Allied, headed by George B. Herman, Jr., maintains that it has always assigned the work to refrigeration mechanics whenever it had control over the assignments.

The carpenters, however, contend that "the traditional function of the carpenters is unloading, placing, setting, and assembling of such refrigeration equipment and the traditional function of steamfitters is to perform services of steamfitters and pipefitters after the equipment has been unloaded, placed, set, and assembled."

Previously, Allied, along with McChesney, had filed charges against the carpenters with the National Labor Relations Board for unfair labor practices.

The charges cited 13 cases of work stoppages on supermarket jobs between 1951 and January, 1956 and eight additional stoppages between February, 1956 and Nov. 22, 1957.

The stoppages occurred, Allied complained, when carpenters walked off jobs following assignment of refrigerated work to steamfitters and steamfitters walked off when it was assigned for carpenters.

The National Joint Board of the Building and Construction Industry Dept., AFL-CIO, for settling jurisdictional disputes between unions has had the case for a long time, it has been reported.

Just recently, the board decided in favor of the carpenters on a single job. But, it was said, the work had already been completed by the refrigeration mechanics before the decision was announced.

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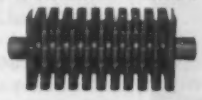

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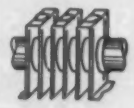

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